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United States

# Circuit Court of Appeals

For the Ninth Circuit.

# Apostles on Appeals.

(IN TWO VOLUMES.)

COMPAGNIE MARITIME FRANCAISE, a French Corporation,

Appellant,

vs.

HERMANN L. E. MEYER, GEORGE H. C. MEYER, HERMANN L. E. MEYER, JR., J. W. WILSON, and JOHN M. QUAILE, Partners Under the Style of MEYER, WILSON & COMPANY,

Appellees.

VOLUME II. (Pages 257 to 504.)

Upon Appeals from the Southern Division of the
United States District Court for the
Northern District of California
First Division.

AUG 27 1917



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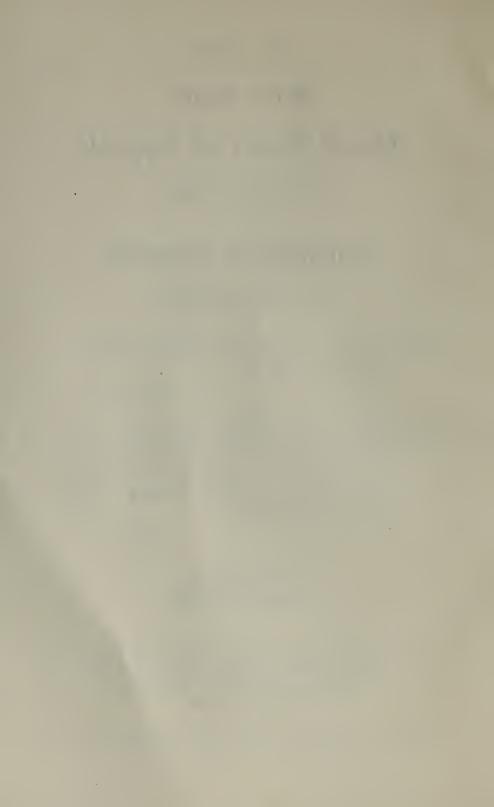
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(Testimony of Hiram Coalfleet Davison.)

Q. Would you expect sea of that character to so strain a vessel that she would leak as this vessel leaked if she was in a seaworthy condition when she started?

A. Well, we do not expect it, but they do sometimes; there may be something defective about the ship that we do not know until we get to sea and get this weather.

Q. Did you ever have heavy rolling in calm weather? A. Yes, very often.

Q. Is that unusual in certain parts of the globe?

A. No. After a heavy gale of wind, or perhaps we might not have the wind, it may be the sea from wind at a distance from us; if it is calm and the vessel is helpless she will get in what we call the trough of the sea and she will roll very heavily.

#### Recross-examination.

Mr. HENGSTLER.—Q. Captain, as a matter of fact, the weather on September 28th—not the weather on September 28th, but the condition of the sea with reference to its being rough and being a heavy swell, the condition of the sea might have been much rougher than the mere wind on the 28th of September might indicate, might it not?

A. Well, the fact of the wind shifting from one point to the other would make a worse sea than if it was blowing steadily from one point.

Q. And also it might have been that a very heavy wind swept [222] over that same neighborhood on the preceding day and might have passed away, and there might be no wind and still the sea be exceed-

(Testimony of Hiram Coalfleet Davison.) ingly heavy, might it not?

A. Oh, yes, that is probable.

Further Redirect Examination.

Mr. CAMPBELL.—Q. Captain, if the ship was rolling heavily can you state whether or not you would expect an entry to that effect to be made in the log?

A. Well, yes, we always make an entry, or as a rule; sometimes a thing like that is neglected. Sometimes there are a great many things neglected in the log. That is for the mate to keep and we lonly overhaul it once a week.

### Testimony of Edmund E. Manning, for Libelants.

EDMUND E. MANNING, called for the libelant, sworn.

Mr. CAMPBELL.—Q. You are a ship master, are you, Captain? A. I am.

- Q. How long have you been going to sea?
- A. 29 years.
- Q. How long have you been a ship master?
- A. 18 years.
- Q. What character of vessels have you sailed in as master? A. Most all kinds.
- Q. Are you at present the Master of a sailing vessel? A. I am.
  - Q. What one? A. The "William T. Lewis."
- Q. What was she before she was renamed the "William T. Lewis"?
  - A. The "Robert Duncan."
  - Q. A British iron bark?
  - A. A British steel bark.

- Q. A three-masted bark or a four-masted?
- A. Four-masted.
- Q. What tonnage?
- A. 2,000 tons; 196 is the correct tonnage. [223]
- Q. Do you mean 2,196 or 2,096?
- A. I mean 1,996.
- Q. What is her dead weight capacity?
- A. 3,500 tons.
- Q. In what waters have you sailed, Captain, as master?

  A. I have sailed all over the world.
  - Q. Have you ever been around Cape Horn?
- A. Yes, sir.
- Q. How many times do you suppose?
- A. 22, I think.
- Q. Have you ever gone around from the South Atlantic to the South Pacific, in the months of November and December? A. Yes, sir.
- Q. What kind of weather do you expect to encounter off to the northwestward of the Falkland Islands, in the month of November?
  - A. We have all kinds of weather.
  - Q. What do you mean by all kinds of weather?
- A. Some days you will have fine weather and other days you will have a gale of wind.
  - Q. Are you familiar with the Beaufort Scale?
  - A. Not very.
- Q. You do not rate your different grades of weather by the Beaufort Scale?
  - A. No, I do not.
- Q. Give us a little more graphic description of the kinds of weather you might expect; when you say

"bad weather" what do you mean by "bad weather," what effect does it have on the ship?

- A. You have to reduce your ship down; if it is blowing a gale of wind you reduce your ship down to it, with a heavy sea running.
  - Q. What effect does a heavy sea have on a vessel?
  - A. It makes her roll and tumble about.
- Q. Does it ever make her roll so that she will roll 'her bulwarks under? A. Yes, sir.
  - Q. Is that an unusual or a common occurrence?
  - A. A common occurrence. [224]
- Q. Would you expect that, if you were starting out from Rotterdam to San Francisco and passing the Horn in the month of December? A. Yes, sir.
- Q. Would you expect to have any water on the vessel in that weather? A. Yes, sir.
- Q. When you say that you would expect to reduce the ship, would that be an ordinary experience or extraordinary? A. Ordinary.
- Q. What sails would you be carrying in a gale of wind?
- A. I would be carrying the lower top-sails if she twas blowing a gale of wind.
- Q. I am going to read to you this weather which is described by the Master, reading from page 11:
  - "Q. How long did that go on?
- A. Nothing happened particularly until the 22d of November.
- Q. Where was the vessel on that day?
- A. The vessel was about 49 degrees, 37 minutes South latitude, and 66 degrees, 37 minutes west longitude."

I will ask you, Captain, have you those in mind?

- A. Yes, sir.
- Q. Whereabouts does that place you with respect to Cape Horn, the Falkland Islands and the River Platte?
- A. Northward and westward of the Falkland Islands.
  - Q. Is that in the vicinity of the River Platte?
- A. It is to the southward of the River Platte. The River Platte, I think, is in 38; from 35 to 38.
- Q. "Q. On that date the weather was fine until 9 o'clock at night. The wind increased in force rapidly, and we had to take in all sails but the foresail, two lower top-sails and the lower stay-sails." [225] Was she at that time, Captain, under such shortened sail as indicated a heavy gale?
  - A. Not a very heavy gale, a moderate gale.
- Q. "A. At 11 o'clock, the wind blew a storm, and the sea became heavier very rapidly. At twelve o'clock, in a gust we lost the topmast stay-sail and the mizzen stay-sail. In a while the sea became tremendous, and we lost the fore stay-sail. The ship not being stayed by the sails we had lost, she rolled terribly. The decks were full of water. The decks being full of water, and the ship rolling heavily, we could not get the exact soundings.
  - Q. Could you pump?
- A. No, sir, we could not pump. I went myself in the pump-well, and I saw there was an increase of water."

- Q. Captain, what do you mean by the "pumpwell"?
- A. The entrance where you go down to the pumps. There is a hatch there.
- Q. It is like an ordinary well, but leads from the deck down to the bottom of the ship? A. Yes.
- Q. So that you can get down into the bottom of the ship and see what the water is? A. Yes.
- Q. "I went myself in the pump-well, and I saw there was an increase of water, but we could not pump because the bottom of the pipe at each rolling was dry, the vessel being on her side. Another survey was made at 4 o'clock in the afternoon, and we saw the same thing, the sea being still very heavy, and the wind shifting to the southwest, the ship in a cross sea. We wore the ship around at 8 o'clock. The sea was very high until the 25th of November at 8 o'clock A. M. On the 24th of November, coming around westerly at 2 o'clock P. M., we wore [226] 'the ship around to take a starboard tack. I ordered the pumps to be sounded by the carpenter when the ship was upright, and the carpenter reported that he found one meter and 25 centimeters in the hold. so that the water had increased rapidly since the morning. After the wearing of the ship, I set one watch to the pumps, and ordered an examination of the life-boats made to see that they were in order. At 6 o'clock, the wind freshened again, big seas coming from every part; the decks being always covered with water it was very difficult to work the pumps. At 6 o'clock, we found one meter and 55

centimeters in the hold. At 6 o'clock I called the crew aft and explained to them the situation, and we resolved to take refuge in the Falkland Islands for the saving both the cargo and the ship. At the same hour we kept her off, and made for the Islands.

Q. We do not need the further details until you get to the place where you beached the ship.

A. That is a few hours later. Both watches were relieving each other at the pumps every half hour, so they were working continually, and I saw that the water did not increase so much while the ship was running before the wind. The ship was steering very badly when we were close to Roy Cove. We entered the Cove at 4:30, and at 4:55 the ship was beached at 500 meters from the entrance of the Cove. At that time the sounding of the pump was two meters and 27 centimeters, the ship having a list of 6 degrees to starboard."

Now, Captain, I will ask you whether or not, in your judgment, the weather detailed and described by this log, or by the Master—I suppose it is an entry taken from the log—was [227] weather different from what you might expect on a voyage around Cape Horn from the South Atlantic to the South Pacific, in the month of November?

A. Yes, I think so. I have experienced the same kind of weather.

Q. That is the same kind of weather you would expect? A. Yes, sir.

Q. Have you ever made a voyage around Cape 'Horn without getting that kind of weather?

- A. I do not think I have.
- Q. Will you tell me whether or not a ship is more apt to strain herself when she is working under a head sea or running before the wind?
- A. Working into a head sea she is more apt to strain herself.
- Q. And if a ship was leaking when she was running into a head sea and was afterwards put about and put before the wind and the leaking was less, would that indicate to your mind the source of the leak at all?

Mr. HENGSTLER.—Ask him what it would indicate to his mind; don't suggest to him.

- Mr. CAMPBELL.—I have not suggested anything to him; I am asking him whether it would indicate anything?
  - A. Will you ask the question again?
- Q. I will strike that whole question out. If a ship had been leaking when she was sailing into a head sea and she was afterwards put before the wind, in the same sea, and the leaking was less, I ask you whether or not that would indicate to you anything as to the possible source of the leak or the possible cause of the leak?

  A. No, I do not think so.
- Q. Supposing that you were master of a vessel and you found that your vessel was leaking so much water per hour, or per 24 hours, when you were working into a head sea, and you [228] afterwards put her before the same sea, and you found the leak is decreasing, she is not leaking as much, would that to you, as the master of the vessel indicate anything

as to the cause or as to the source of the leak?

A. Well, there are so many things that could cause it. Of course, the ship would be working more when she is going into a head sea; it would not tell me where it was or what it was on account of that.

Q. Now, bearing in mind that state of facts, Captain. I will add to that that afterwards she is docked and certain of her butts are found to be leaking; would the circumstance of her leaking less in running before the sea than when running into the sea indicate anything to your mind as to whether or not that leakage was leakage through the butts?

A. It might do that; she might not leak quite so much running into the sea; she would be strained more and working when going into a head sea; she would not leak as bad when she was running.

- Q. That is, if the leakage came from what source?
- A. Through her butts.
- Q. Now, I am going to read to you from the log again, reading from page 34: "Q. On what date did you discover the leak?
  - A. The 28th of September.
- Q. Up to that time there was no water at all in the well, as I understand?
  - A. A little water, but very little indeed.
  - Q. The ship was not making any water?
  - A. No, sir.
- Q. Why didn't you keep any record at all of the soundings before that time in the log-book?
- A. The log-book does not show any amount of water because there was none to report, [229] but

(Testimony of Edmund E. Manning.) at the end of each watch, the officer has written down "Pumps free."

- Q. On what day did you leave Brest?
- A. 24th of September.
- Q. The weather from the time you left Brest up to the 28th day of September, when the leak was sprung, was as fine weather as it was possible to have at sea, was it not?

A. The two or three first days. After that we had a breeze starting at the west, going to southwest, getting fresh, and shifting to the northwest."

Is it ever customary, Captain, for a shipmaster to describe a gale of wind as a breeze?

- A. No, I do not think so.
- Q. "Q. But you had no stormy weather up to that time—up to the 28th?
  - A. I have not examined the log.
- Q. Look at your log, and tell us whether the weather was not the ordinary weather that a sailing vessel encounters without any stormy weather.
- A. During the nights of the 26th and 27th, we had bad weather.
  - Q. Describe the weather as it is given in the log.
- A. From 8 o'clock to midnight of the 26th, we had bad weather.
- Q. Is this entry in your log correct: 'From midnight of the 26th to midnight of the 27th, weather squally; nice breeze; swell; all sails set.' In the second watch, 'Squally weather; nice breeze; all sails set.' In the third watch 'Squally weather; nice breeze; all sails set.' In the fourth watch, 'Squally

weather of little strength; a fine breeze; all sails set.' Next watch, 'Cloudy; fine breeze; a few squalls; all sails set.' The next day; 'From midnight of the 27th to midnight of the 28th.' In the first watch, 'Squally weather; strong rain; the wind blows to the southwest, and shifts to the northwest; gaff-top-sail and main-jib torn, royals and [230] upper topgallant sails and stay-sails and spanker taken in.' In the next watch: 'The same kind of weather; strong breeze; a large swell from the northwest; the topgallant-sails taken in; unbent the main-jib; violent squalls; strong winds; heavy sea; set the topgallantsails and mizzen stay-sail.' Next watch, 'Cloudy weather and squally; strong breeze; heavy sea from the west, northwest; the same sail as during the preceding watch.' Next watch, 'Squally weather; strong breeze; furled the mainsail at 6 o'clock.' Next watch on the same day, 'The same weather; very strong swell; violent squalls.' The next day, 'Midnight of the 28th to midnight of the 29th.' In the first watch, 'Fine weather; some squalls; strong breeze becoming less at the end of the watch.' Second watch, 'Fine weather; fine breeze; set the mainsail; royal, spanker and stay-sail.' In the next watch, 'Fine weather; fine breeze; all sails set.' In the next watch, 'Squally weather; the sea falls more and more; all sails set; tested the steam gear; found an increase of water in the hold; sounded 23 centimeters; cleared the pumps." In the next watch, 'Fine weather; the breeze softens; all sails set.' The

(Testimony of Edmund E. Manning.)
next watch, 'Fine weather; light breeze; all sails set.' ''

Captain, how would you describe the weather encountered during those days?

Mr. HENGSTLER.—Just a moment; perhaps you had better read the entire description of that weather.

Mr. CAMPBELL.—All right, I will go on.

"And on that day, did you make any notation in your own handwriting on the log-book with reference to the discovery of water in the hold?

- A. Yes, sir; I wrote at the foot of the log not to fail to sound at every watch, and to give [231] an account to the captain; if the water rises slowly and regularly, they must pump in the morning at 7:20 and in the evening at 4 o'clock.
- Q. Does that log correctly state the facts as they occurred at the time with reference to the character of the weather? A. Yes, sir.
- Q. During all of this time, or any part of this time, was your ship rolling? A. Yes, sir.
- Q. Was that the natural roll of an ordinary ship in that kind of weather, or was it an extraordinary rolling?

At The rolling was caused by this wind which started at the southwest, and shifted to the northwest, the sea having become very heavy by the cross seas, and when the wind shifted to the northwest, the wind decreased, and the vessel not being stayed by the sails rolled heavily.

Q. Is it not usual if a vessel rolls very heavily, that

(Testimony of Edmund E. Manning.) is more than is expected of her, to make an entry in the log that the ship has been rolling?

- A. Generally, but it was neglected.
- Q. Was there a laboring of the ship prior to the leak starting, which was unexpected or unusual?
- A. Yes, sir; the day after that night, the wind shifted from the southwest to the northwest.
- Q. Was the laboring of the ship upon that occasion very extraordinary?
- A. The ship labored less than she did later after that storm at the Falkland Islands, but she did labor very much.
- Q. Is it not usual for any ship to labor more or less in a cross sea without making water?
- A. Certainly, the "Duc d'Aumale" itself did it many times, probably, but this time she sprung a leak. [232]
- Q. Then that must have come from some weakness of the ship before she started, did it not? There must have been some weakness?
  - A. I don't think so.
- Q. How can you account for the ship springing a leak in weather which was fine, all excepting during one or two days at the most, and that weather not very bad, no storms?
  - A. I cannot give any other explanation.
- Q. Then the only explanation that you have to give is that the ship strained in this kind of weather, and started a leak? That is the only explanation you can give? A. Yes, sir.
  - Q. After the leak was started, how long did the

(Testimony of Edmund E. Manning.) good weather continue?

- A. Variable weather, up to the storm that we had in the west of the Falkland Islands.
  - Q. About what date was that?
  - A. The 22d of November."

Mr. HENGSTLER.—May I make a suggestion here, if your Honor please: This is a description which the captain of the "Duc d'Aumale" gave on cross-examination; in order to get his picture of the situation completely it would probably be well to read also the description which he gave on direct examination; that will complete it and will give a more perfect picture of the weather and of its action.

Mr. CAMPBELL.—I agree with you, Mr. Hengstler; do you want to read it?

Mr. HENGSTLER.—You can read it. It is on page 10, I think.

Mr. CAMPBELL.—Yes, on page 10. I will read it.

- "A. We left Brest on the 21st at 9 o'clock in the morning. There was a small breeze from the north, shifting from the north to west, and we sailed until the 26th of September, and [233] had fine weather and calm sea. We encountered westerly wind with a choppy sea.
  - Q. On what day?
- A. The 26th of September. There was a swell until the 28th.
  - Q. What occurred on the 28th?
- A. The wind hauled to the southwest, freshening and increased, the sea coming heavy rapidly. The

wind shifted to the northwest on the 28th at 2 o'clock in the morning. The weather cleared up, but the sea became very heavy. We had very violent squalls, especially during the watch from 8 o'clock in the morning until noon. The weather became cloudy again in the afternoon with squalls, the sea being very heavy, direction west, northwest. From 8 P. M. to midnight, the sea was still heavier, and the squalls more and more violent.

Q. Are you still on the 28th?

A. Yes, sir; on the 29th the weather became fine, and the squalls less and less violent, the wind decreasing rapidly, there being still a squall. There were times when the ship was rolling heavily, the sea coming from abeam. At 4 o'clock in the afternoon, we found an increase of water in the ship's hold. We found 23 centimeters at 4 o'clock. We pumped at once, and cleared the water from the hold in a quarter of an hour.

Q. What latitude and longitude was the vessel in on that day, the 29th?

A. 38 degrees, 28 minutes north latitude at noon; 17 degrees, 43 minutes west. The vessel was steering south 35 degrees west.

Q. Now, go ahead and tell what happened next.

A. We saw every day that water was increasing in the hole regularly, about one centimeter every hour.

Q. What did you do with the pumps during that time? [234]

A. We pumped regularly, morning and evening.

At 7:20 in the morning and 4:20 at night.

- Q. For how long a time each night?
- A. About 20 minutes each time.
- Q. Did you succeed in controlling the inflow of the water by this pumping?
- A. By pumping 40 minutes, we cleared the water from the hold.
  - Q. How long did that go on?
- A. Nothing happened particularly until the 22d of November."

Now, Captain, bearing in mind those descriptions of the weather, I will ask you whether or not in your judgment, based upon your experience as a shipmaster, that weather was any other than the usual weather expected to be encountered at sea?

- A. No, I do not think it was.
- Q. How would you characterize it?
- A. Well, it was between fine weather and a moderate gale, with a heavy cross sea.
- Q. I will ask you whether or not, in your judgment, the seas which would be caused by such wind as described here, and the weather described here, would be such seas as you would ordinarily expect to encounter at sea, or extraordinary?
- A. Well, I think a little extraordinary; sometimes you have more sea than what the wind would think you would have, that is, from the amount of wind you have; you would have more sea.
- Q. Is there any description here which would indicate to your mind whether or not the sea was any other than the kind of a sea you might expect at sea?

- A. No, I do not think it is. We experienced that lots of times in cases like that.
- Q. Is there anything in this entry in the log from which I read that indicates that the vessel was severely straining from that sea. [235]

Mr. HENGSTLER.—If your Honor please, I object to that, because the log itself answers that question.

Mr. CAMPBELL.—I will withdraw the question; it may be stricken out of the record.

- Q. Will you state, Captain, whether or not you would expect to find an entry in the log to that effect if the ship was rolling very heavily?
- A. Yes, I would expect it. I would expect my mate to put an entry in the log.
- Q. Have you ever carried a cargo of pig iron and coke?
- A. I have never carried any pig iron; I have carried coke.
- Q. Captain, I wish you would take this chart. This is one of the Hyrdographic charts. I want you to mark on there, as nearly as you can, the position of this vessel on the 22d of November, to wit: 49 degrees, 37 minutes south, 66 degrees, 21 minutes west.
- A. This is not exactly the place, but it is just about exactly where I have marked the cross.
- Q. The cross marked with the capital "D" indicates approximately the latitude and longitude?
  - A. Yes, sir.

The COURT.—Now, Captain, where is that river you spoke of?

A. That is further south; that is between 35 and 38, I think, the mouth of the river.

Mr. CAMPBELL.—I will offer that chart in evidence. (The document was marked Libelant's Exhibit "C.")

Mr. Hengstler, have you any objection to my offering the pictures of this vessel for the purpose for which I have used them?

Mr. HENGSTLER.—You mean the photographs?

Mr. CAMPBELL.—Yes.

Mr. HENGSTLER.—No objection. [236]

(The photographs are marked Libelants' Exhibits "A" and "B," respectively.)

#### Cross-examination.

Mr. HENGSTLER.—Q. You have no knowledge with reference to the customs of French ships and what entries they make in their log-books?

- A. None at all, sir; I know nothing about that.
- Q. Captain, do you know the French bark "Duc d'Aumale" A. No.
  - Q. You have never seen her?
  - A. I have never seen her.

Mr. CAMPBELL.—Q. Captain, you have seen the French types of vessels, have you?

- A. Oh, yes, I have seen them very often.
- Q. Do they differ materially in their rig from the English vessels? A. In some ways they do.
  - Q. In what ways?

A. They generally have more houses on the deck, less room space.

Mr. HENGSTLER.—Q. They have different lines from the English ships, generally speaking, do they not?

- A. I do not think there is very much difference.
- Q. There are different types of French vessels also, are there not?
  - A. They are not all built along the same lines.

#### Testimony of D. R. Fleming, for Libelants.

- D. R. FLEMING, called for the libelants, sworn. Mr. CAMPBELL.—Q. Captain, are you a ship-master? A. Yes, sir.
  - Q. How long have you been going to sea?
  - A. About 33 years.
  - Q. How long have you been a master?
  - A. 8 or 9 years. [237]
  - Q. Of what ship are you at present master?
  - A. The "Drummuir."
  - Q. What class of vessel is she?
  - A. A four-masted bark, 1,798 tons register.
  - Q. What is her dead weight capacity?
  - A. 2,800 tons.
  - Q. What kind of a vessel? A. Iron.
  - Q. Is she a British registered vessel?
  - A. Yes, sir.
  - Q. Have you ever been around Cape Horn?
  - A. Yes, sir.
  - Q. How many times, do you suppose?
  - A. I could not tell, not very many, about 8 or 9.
  - Q. Have you ever been around from the South

Aflantic to the South Pacific, in the months of November and December?

- A. I have, but it is so long ago that I almost forget it.
- Q. What kind of weather did you find you encountered around Cape Horn?
- A. You could get all kinds. The last time I went was not in November, and we had beautiful weather, but two days afterwards or 4 hours afterwards you might get a gale of wind.
- Q. What kind of gales of wind may you expect down there? A. You get all kinds.
- Q. What effect do such gales of wind have upon the sea?

  A. They raise her up in a big sea.
- Q. What effect do the gales of wind that you may expect around Cape Horn have upon a vessel?
- A. Well, it all depends upon the strength of the gale and of the vessel herself, and the condition of the vessel, the condition that she is in, and the draught of the vessel, the way she is loaded, and the trim of the vessel.
- Q. I will get at it this way: State whether or not you may expect a vessel to take water on the deck.

  [238] A. Oh, certainly.
  - Q. Is that an unusual or a usual occurrence?
  - A. It is very usual.
- Q. Do you ever expect to have to shorten sail at all?
- A. Oh, yes, certainly; we very seldom go around there without shortening sail.
  - Q. Have you ever gone around there without the

(Testimony of D. R. Fleming.) vessel rolling or pitching at all?

- A. Yes, but not in that month. My last time around there was this last year and it was fine weather. That was the summer time, and that is exceptional.
- Q. Is it usual or unusual to encounter fine weather around Cape Horn? A. It is unusual.
- Q. When you say you are going around Cape Horn, from where in the South Atlantic to where in the South Pacific do you include in rounding the Horn? A. What is that?
- Q. Let me ask you the question this way, though it might be leading; what do you call "rounding the Horn"; from 55 to 55? A. Yes, exactly.
- Q. Is the weather that you might expect to encounter to the northwestward of the Falkland Islands any different in character than that you may expect in rounding the Horn proper?
- A. Well, I could not state that exactly. I have not been around there since so long ago that all I remember is having bad weather; I have not been around there for years except in the summer time.
- Q. Now, Captain, I am going to read to you from this log. You have not been in court all the morning, have you?
  - A. I have been here a good while.
  - Q. I will read from page 11:
  - "Q. How long did that go on?
- A. Nothing happened particularly [239] until the 22d of November.
  - Q. Where was the vessel on that day?

A. The vessel was about 49 degrees, 37 minutes south latitude, and 66 degrees, 21 minutes west longitude. On that date the weather was fine until 9 o'clock at night. The wind increased in force rapidly and we had to take in all sails, but the foresail, the two lower top-sails and the lower stay-sails. At 11 o'clock, the wind blew a storm, and the sea became heavier very rapidly. At 12 o'clock, in a gust, we lost the topmast stay-sail and the mizzen stay-sail. In a while the sea became tremendous, and we lost the fore stay-sail. The ship not being stayed by the sails we had lost, she rolled terribly. The decks were full of water. The decks being full of water, and the ship rolling heavily, we could not get the exact soundings.

### Q. Could you pump?

A. No, sir, we could not pump. I went myself in the pump-well, and I saw there was an increase of water, but we could not pump because the bottom of the pipe at each rolling was dry, the vessel being on her side. Another survey was made at 4 o'clock in the afternoon, and we saw the same thing, the sea being still very heavy, and the wind shifting to the southwest, the ship in a cross sea. We wore the ship around at 8 o'clock. The sea was very high until the 25th of November at 8 o'clock A. M. On the 24th of November, coming around westerly at 2 o'clock P. M. we wore the ship around to take a starboard tack. I ordered the pumps to be sounded by the carpenter when the ship was upright, and the carpenter reported that he found one meter and 25 centimeters in

the hold, so that the water had increased rapidly since the morning. After the wearing of [240] the ship, I set one watch to the pumps, and ordered an examination of the life-boats to see that they were in order. At 6 o'clock, the wind freshened again, big seas coming from every part; the decks being always covered with water, it was very difficult to work the pumps. At 6 o'clock, we found one meter, and 55 centimeters in the hold. A 6 o'clock I called the crew aft and explained to them the situation, and we resolved to take refuge in the Falkland Islands for the saving both the cargo and the ship. At the same hour we kept her off, and made for the Islands.

Q. We do not need the further details until you get to the place where you beached the ship.

A. That is a few hours later. Both watches were relieving each other at the pumps every half hour, so they were working continually; and I saw that the water did not increase so much while the ship was running before the wind. The ship was steering very badly when we were close to Roy Cove. We entered the Cove at 4:30, and at 4:35, the ship was beached at 500 meters from the entrance of the Cove. At that time the sounding of the pump was two meters and 27 centimeters, the ship having a list of 6 degrees to starboard."

Captain, what is your judgment as to the character of the weather described there?

Mr. HENGSTLER.—I object to the question upon the same ground as before.

The COURT.—Very well, it will be admitted sub-

(Testimony of D. R. Fleming.) ject to the objection.

Mr. HENGSTLER.—And also to similar questions of that sort, because that is for the Court to determine from the language used. [241]

The COURT.—Very well, that will be understood. Mr. CAMPBELL.—It is understood that that will be the objection.

- Q. Will you state whether or not, Captain, in your judgment, that is weather that is ordinarily to be expected, or is unusual weather?
- A. I think that is quite usual. Of course, as I said before, it is a long while since I have been there.
  - Q. Where have you been trading in recent years?
- A. I have been trading from Sidney. My last trip was around Cape Horn.
- Q. Did you any weather of that character on that voyage?
- A. No. This was in summer-time, and I had exceptionally fine weather.
  - Q. This is the last voyage you have made?
  - A. Yes.
- Q. Where have you been trading for the last 8 or 9 years?
  - A. All over; South America and the Philippines.
- Q. Have you ever encountered weather of that character? A. Oh, yes.
  - Q. Is it usual or is it extraordinary?
  - A. I do not think it is extraordinary.
- Q. Would you state whether or not, in your judgment, you would expect that weather to so strain a well-constructed ship, a well-founded ship, as to cause

her to leak as this vessel leaked? A. It might.

Q. Is it ordinarily to be expected?

A. Well, there have been a number of cases where it has done so. The ship "Puritan" very recently went the same way.

Q. The "Puritan" was totally lost?

A. Yes. She was an iron ship; she was a well-founded ship. She sprung a leak coming [242] from Sidney to San Francisco just a few months ago.

Q. Were you in her?

A. No, but I have the second officer who was in her working with me now.

Q. I will describe to you now by reading from the log, from page 10 of this testimony, certain weather:

"A. We left Brest on the 21st at 9 o'clock in the morning. There was a small breeze from the north, shifting from the north to west, and we sailed until the 26th of September, and had fine weather and calm sea. We encountered westerly winds with a choppy sea.

Q. On what day?

A. The 26th of September. There was a swell until the 28th.

Q. What occurred on the 28th?

A. The wind hauled to the southwest, freshening and increased, the sea coming heavy rapidly. The wind shifted to the northwest on the 28th at 2 o'clock in the morning. The weather cleared up, but the sea became very heavy. We had very violent squalls, especially during the watch from 8 o'clock in the morning until noon. The weather became cloudy

again in the afternoon with squalls, the sea being very heavy, direction west, northwest. From 8 P. M. to midnight, the sea was still heavier, and the squalls more and more violent.

- Q. Are you still on the 28th?
- A. Yes, sir; on the 29th the weather became fine, and the squalls less and less violent, the wind decreasing rapidly, there being still a squall. There were times when the ship was rolling heavily, the sea coming from abeam. At 4 o'clock in the afternoon, we found an increase of water in the ship's hold. We found 23 centimeters at 4 o'clock. We pumped at once, and cleared the water from the hold in a quarter of an hour. [243]
- Q. What latitude and longitude was the vessel in on that day, the 29th?
- A. 38 degrees, 28 minutes north latitude at noon; 17 degrees, 43 minutes west. The vessel was steering south 35 degrees west.

Where was that, Captain, with respect to the southern end of the British Isles?

- A. I forget just now.
- Q. You cannot tell that without a chart?
- A. No.
- Q. Now, go ahead and tell what happened next?
- A. We saw every day that water was increasing in the hold regularly, about one centimeter every hour.
- Q. What did you do with the pumps during that time?
- A. We pumped regularly, morning and evening. At 7:20 in the morning and 4;20 at night.

- Q. For how long a time each time?
- A. About 20 minutes each time.
- Q. Did you succeed in controlling the inflow of the water by this pumping?
- A. By pumping 40 minutes, we cleared the water from the hold.
  - Q. How long did that go on?
  - A. Nothing happened particularly until the 22d of November."

That is the Captain's testimony on direct examination. On cross-examination, with respect to the same weather, he testified as follows, reading from page 35:

"From midnight of the 26th to midnight of the 27th, weather squally; nice breeze; swell; all sails set.' In the second watch, 'Squally weather; nice breeze; all sails set.' In the second watch, 'Squally weather; nice breeze; all sails set.' In the third watch, 'Squally weather: nice breeze; all sails set.' In the fourth watch, 'Squally weather of little strength; a fine breeze; all sails set.' In the next watch, [244] 'Squally weather; nice breeze; all sails set.' Next watch, 'Cloudy; fine breeze; a few squalls; all sails set.' The next day, 'From midnight of the 27th to midnight of the 28th.' In the first watch, 'Squally weather; strong rain; the wind blows to the southwest, and shifts to the northwest; gaff top-sail and main-jib torn, royals and upper topgallant sails and stay-sails and spanker taken in.' In the next watch, 'The same kind of weather; strong breeze; a large swell from the northwest; the topgal-

lant-sails taken in; unbent the main-jib; violent squalls; strong winds; heavy sea; set the topgallantsails and mizzen stay-sail.' Next watch, 'Cloudy weather and squally; strong breeze; heavy sea from the west, northwest; the same sail as during the preceding watch.' Next watch, 'Squally weather; strong breeze; furled the main sail at 6 o'clock.' Next watch on the same day, 'The same weather; very strong swell; violent squalls.' The next day, 'Midnight of the 28th to midnight of the 29th.' In the first watch, 'Fine weather; some squalls; strong breeze becoming less at the end of the watch.' Second watch, 'Fine weather; fine breeze; set the mainsail; royal, spanker and stay-sail.' In the next watch, 'Fine weather; fine breeze; all sails set.' In the next watch, 'Squally weather; the sea falls more and more; all sails set; tested the steam gear; found an increase of water in the hold; sounded 23 centimeters; cleared the pumps.' In the next watch, 'Fine weather, the breeze softens; all sails set.' The next watch, 'Fine weather; light breeze; all sails set.'

And on that day, did you make any notation in your own handwriting on the log-book with reference to the discovery of water in the hold?

A. Yes, sir; I wrote at the foot of the [245] log not to fail to sound at every watch, and to give an account to the captain; if the water rises slowly and regularly, they must pump in the morning at 7:20 and in the evening at 4 o'clock.

Q. Does that log correctly state the facts as they

(Testimony of D. R. Fleming.)
occurred at the time with reference to the character
of the weather?

A. Yes, sir.

- Q. During all of this time, or any part of this time, was your ship rolling? A. Yes, sir.
- Q. Was that the natural roll of an ordinary ship in that kind of weather, or was it an extraordinary rolling?
- A. The rolling was caused by this wind which started at the southwest, and shifted to the northwest, the sea having become very heavy by the cross seas, and when the wind shifted to the northwest, the wind decreased, and the vessel not being stayed by the sails, rolled heavily.
- Q. It is not usual if a vessel rolls very heavily, that is, more than is expected of her, to make an entry in the log that the ship has been rolling?
  - A. Generally, but it was neglected.
- Q. Was there a laboring of the ship prior to the leak starting, which was unexpected or unusual?
- A. Yes, sir; the day after that night, the wind shifted from the southwest to the northwest.
- Q. Was the laboring of the ship upon that occasion very extraordinary?
- A. The ship labored less than she did later after that storm at the Falkland Islands, but she did labor very much.
- Q. Is it not usual for any ship to labor more or less in a cross sea without making water?
- A. Certainly, the 'Duc d'Aumale' [246] itself did it many times, probably, but this time she sprang a leak.

- Q. Then that must have come from some weakness of the ship before she started, did it not? There must have been some weakness?
  - A. I don't think so.
- Q. How can you account for the ship springing a leak in weather which was fine, all excepting during one or two days at the most, and that weather not very bad, no storms?
  - A. I cannot give any other explanation.
- Q. Then the only explanation that you have to give is that the ship strained in this kind of weather, and started a leak. That is the only explanation you can give? A. Yes, sir.
- Q. After the leak was started, how long did the good weather continue?
- A. Variable weather, up to the storm that we had in the west of the Falkland Islands.
  - Q. About what date was that?
  - A. The 22d of November."

Now, Captain, I will ask you whether or not the character of weather detailed by those entries in the log was in your judgment the usual weather you may expect at sea, or the unusual weather?

- A. Oh, it is quite usual.
- Q. I will ask you whether or not in your judgment the kind of a sea that would be produced by that weather is the usual or the unusual sea to be expected? A. The usual.
  - Q. Do you use the Beaufort Scale?
- A. Well, I have used it, but it is some time ago now. I am not quite familiar with it.

- Q. When you get into a gale of wind, we will say an ordinary gale, what do you shorten down to?
  - A. It all depends on the strength of the gale.
  - Q. We will say an ordinary gale of wind?
- A. Of course, that depends on the ship, too. Some ships will [247] carry more canvas than others.
- Q. What sail would a ship be carrying when she was shortened down under storm sails?
- A. She would be under probably the top-sails. Some ships would have her fore and mizzen top-sails off; other ships might have their three upper top-sails off; others might have nothing but a lower top-sail and stay-sail.
  - Q. It depends on the ship?
- A. It depends on the ship. In a heavy gale nearly every shipmaster takes everything off except the lower top-sail and some fore and aft-sails, to steady her.
- Q. Some of her head-sails and some of her stay-sails? A. Some of her stay-sails.

#### Cross-examination.

Mr. HENGSTLER.—Q. Captain, the kind of a sea which happens to prevail at any particular time, is it dependent upon the wind? A. Yes, sir.

- Q. Entirely? A. Well, that is my experience.
- Q. Upon the wind which prevails at the time?
- A. Yes, or previous; I have seen a very heavy sea with no wind at all; we have not had wind for perhaps two days and we would have a heavy sea; the wind had been prevailing there sometime previously.
  - Q. From the fact that the master of a two-masted

ship or bark furls certain sails in certain weather or certain winds, can he from that make any conclusion as to what sails should be furled in a three-masted bark?

- A. Well, hardly; you can form an opinion.
- Q. But you cannot form any definite conclusion?
- A. No, you cannot draw any definite line.

Mr. CAMPBELL.—Q. Have you ever been in a three-masted iron bark? [248]

- A. Yes; Oh, excuse me, they have all been three-masted ships and four-masted ships. A four-masted bark rigged and a three-masted square rig.
- Q. The difference is that you would have no yards on the aft mast? A. No yards on the aft mast.
- Q. If a ship had been rolling heavily at sea, would you expect to find an entry to that effect in the log?
  - A. Oh, yes.
  - Q. Is it usual and customary, or is it unusual?
- A. It is always usual. Of course, some mates neglect that, but we always expect them to do it.

Mr. HENGSTLER.—Q. And even in your ships, the ships that you have commanded, the mates have neglected to make such entries, have they not?

- A. Well, I would not like to say definitely that they have neglected; I would not like to say that I remember of their neglecting it. I generally have a look at it myself.
  - Q. You would expect them to make such an entry?
  - A. I would expect them to make it.
- Q. Do you know what the custom is with reference to French ships? A. No, I do not.

(Testimony of D. R. Fleming.)

Q. Do you know the French bark "Duc d'Aumale"?

A. No, I have never seen her.

(A recess was here taken until 2 P. M.) [249]

#### AFTERNOON SESSION.

## Testimony of Eben Curtis, for Libelant.

EBEN CURTIS, called for the libelant, sworn.

Mr. CAMPBELL.—Q. Where do you reside, Captain? A. Alameda.

- Q. Were you during any period of your life a ship-master? A. Yes.
- Q. You are not following the sea at the present time, are you?

  A. Not at the present time.
- Q. Did you hold an American license or a British license?

  A. An American license.
  - Q. How many years did you follow the sea?
  - A. About 37 years.
  - Q. How many years were you master?
  - A. A little over 30 years.
- Q. Were you ever master of an iron or a steel vessel? A. Yes, sir.
  - Q. A deep sea vessel?
  - A. A deep sea vessel; yes.
  - Q. What was the largest vessel you commanded?
  - A. The "Tillie E. Starbuck."
- Q. Was she for many years a well-known vessel out of this port? A. She was.
  - Q. What was her rig? A. A full-rigged ship.
  - Q. A four-masted ship? A. Three-masted.
- Q. The difference between a three-masted ship and a three-masted bark, is that the ship carries yards on

her mizzen mast and the bark does not?

- A. Yes; a three-masted bark will have two mizzens rigged with yards and one without yards.
- Q. Captain, how long did you command the "Tillie E. Starbuck? A. For 17 years. [250]
  - Q. In what trade, Captain, did you run with her?
- A. Well, most of the time between New York and San Francisco, or Portland, Oregon, with two or three voyages to the East Indies and to China.
- Q. How many times, in your experience, do you suppose you have passed around Cape Horn?
  - A. Oh, I should say 20 times or more.
- Q. What kind of weather do you ordinarily expect to encounter on a voyage from the South Atlantic to the South Pacific, around the Horn, in the months of November and December?
- A. Well, we expect most of the weather to be pretty bad.
- Q. What effect does the weather that you may expect have upon the ship? Describe it as well as you can, so that in that way to indicate to us the character of the weather.
- A. Well, strong winds kick up heavy seas and in all heavy seas a ship will strain more or less.
  - Q. Will she have any water on her deck?
- A. If she is a loaded ship she will most always have water on the deck, more or less.
- Q. Have you ever found it necessary to shorten sail when you are in the vicinity of the Horn?
  - A. Yes, very frequently.

- Q. Would you, if you were in the vicinity indicated on the chart marked Libelant's Exhibit "C" to the northwestward of the Falkland Islands, which is approximately the location of the "Duc d'Aumale" on the 22d of November—do you see that there?
  - A. Yes.
- Q. Now, bearing that location in mind, Captain, I will ask you whether or not the weather you there encounter is in any very great particular different from that in the immediate vicinity of the Horn? [251]
- A. Well, the winds are very much the same, but the seas are very differnt.
  - Q. What difference is there, Captain?
- A. As a rule, you are closer to the land and the wind is mostly off the land, the greater part of it, and you do not experience as heavy seas there as you would down in the unbroken ocean.
- Q. State whether or not you might expect in that vicinity seas such as would throw water on to the deck of your vessel?
  - A. Oh, yes, a great deal of it.
- Q. Is an experience of that sort confined to any particular waters or any particular localities of the oceans, taking the water on the deck of your vessel?
- A. No. In all oceans, where you are far enough south or far enough north to get bad weather, you have the same experience, in a great measure.
- Q. When you strike the ordinary bad weather you may expect in the vicinity indicated by the chart, what kind of sail would you carry?

- A. It depends altogether upon the weather we experience there at the time.
- Q. Well, if it is the usual bad weather, what sail would you carry?
- A. Well, if it is blowing a moderate gale we would carry the whole top-sails and the whole foresails. With a heavy gale we would probably come down to the three lower top-sails.
- Q. If you should encounter a gale of wind in that vicinity which compelled you to shorten sail to your three lower top-sails, would that be an unexpected and an unusual occurrence?
- A. No, it would be more unusual if you did not have some weather of that kind.
- Q. If you were encountering such weather as compelled you to shorten sail to your three lower topsails, will you state whether or not, Captain, you would expect a loaded vessel to [252] have water on her deck?
- A. We should exect her to have water on her deck, yes.
- Q. Will you state whether or not, Captain, it is usual or unusual to have your ship so roll at sea that she will roll her bulwarks under?
- A. Well, that is a very heavy rolling when you roll your bulwarks under.
  - Q. Well, do you expect it?
  - A. We get it sometimes, yes.
- Q. Is it necessary to roll your bulwarks under to take water on the deck? A. No, sir, not at all.

- Q. Captain, did you hear the testimony read this morning? A. Yes.
- Q. For the purpose of saving time I will ask this question: have you in mind the condition of the weather which was detailed in the log for the gales we will call it, off the Falkland Islands?
  - A. I think I have, yes.
- Q. Bearing in mind what you heard read from the log, I will ask you whether or not in your judgment, Captain, that weather was the usual or the unusual, the ordinary or the extraordinary weather such as you might expect to encounter or would not expect to encounter in that vicinity at that season of the year?
- A. I should think it would be about the usual thing. Sometimes you go down there with very little bad weather, but you almost always get some.
- Q. In passing from the Atlantic to the Pacific, in the month of November—from the month of September to the month of April, in the southern summer, from which direction is the prevailing wind?
  - A. From the west.
- Q. And if that makes any sea it makes a head sea in going around there?
- A. Yes, a head sea in coming from the Atlantic to the Pacific. [253]
- Q. Do you call going from 50 South Atlantic to 50 South Pacific around the Horn?
- A. That is what we generally designate around the Horn.
- Q. Now, Captain, have you in mind the testimony from the entries in the log, which I read this morn-

ing, of the weather that was encountered on the 26th, 27th and 28th and 29th days of September, immediately after the vessel left Brest? A. I have.

- Q. Captain, I will ask you to state whether or not that weather was in your judgment unusual or unexpected weather, or was it the usual expected weather in that vicinity in that season of the year?
- A. Oh, it was weather you could expect there at that time.
  - Q. How would you characterize that weather?
- A. As a moderately strong—well, not much more than a strong breeze; you might say that it was more fresh winds; not heavy at all.
- Q. If you had a well-constructed, well-founded and well-stowed ship, in all respects seaworthy when she left Brest, would you have expected her to have so strained in that kind of weather as to have caused the leakage that the "Duc d'Aumale" suffered from in this case?
- A. I should not expect her to strain, or any well-founded vessel to strain in that weather to make her leak.
- Q. If a vessel had encountered severe rolling such as might strain her, would you expect an entry to that effect to be made in the ship's log?
  - A. It should be.
- Q. If you were looking over a log, would you expect to find such an entry if that weather had been encountered?
- A. Yes sir, I would expect that log-book would give a proper description of the weather and any-

(Testimony of Eben Curtis.) thing unusual that occurred.

- Q. Would the sea which would be made or created by the weather [254] as detailed on the 26th, 27th, 28th and 29th of September, in your judgment, be a usual or an unusual sea for that vicinity in that season of the year?
  - A. Nothing unusual about it.
- Q. Does a ship roll more in a cross sea than she does in a straight running sea?
- A. Well, she rolls differently. The sea does not make the vessel roll as a whole; one sea would twist her one way and the other would twist her another way.
- Q. In your judgment which produces the greater strain upon a vessel, running before the sea or running into a head sea?
- A. Well, going into a head sea produces the most strain on the vessel if you are going anyways fast when driving her into the sea.
- Q. Have you ever transported a cargo of coke and pig iron? A. I have not.
  - Q. What kind of cargoes have you carried?
- A. Well, I think almost everything except coke; I have carried plenty of pig iron.
  - Q. You have carried plenty of pig iron?
  - A. Yes.
  - Q. Mixed with other general cargo?
  - A. Mixed with other general cargo.
- Q. Have you ever carried it with other cargo which was lighter than the pig iron?
  - A. Oh yes, a great deal lighter.

- Q. I mean lighter to the same bulk.
- A. Oh yes, a great deal, a great difference.
- Q. Now, Captain, I want to read you from the testimony, or rather, I will state it here: The testimony in this case shows that on the voyage in question the "Duc d'Aumale" carried 2,660 tons of cargo, of which 1,900 tons were carried in her lower [255] hold and 760 tons in her between-decks; of the 2,660 tons 660 were pig iron; when she started on her voyage 60 tons of pig iron were stowed in her between-decks and 600 tons in her lower hold; that is to say, that of the 1,900 tons carried in her lower hold 600 were pig iron; and of the 760 tons in her between-decks 60 were pig iron; the 600 tons in the lower hold were stowed in one body immediately aft of the main hatch, occupying a space about 63 feet long and 23 feet wide at one end 36 feet in width at the other. Now, I will ask you, Captain, whether or not in your judgment such stowage was good stowage and if not, why?

Mr. HENGSTLER.—If your Honor please I desire to reserve an objection to this question upon the ground that the witness has not qualified as an expert on stowage; that, on the contrary, he has stated that he has had no experience whatever in the carriage or stowage of coke and pig iron in vessels.

The COURT.—Very well; he can answer the question; he says he has had experience in pig iron.

Mr. CAMPBELL.—Q. I will go a little further with this: Captain, what kind of cargoes have you carried with pig iron?

- A. I have carried pig iron with coal and pig iron with the ordinary general cargo that is brought from the East to this coast.
- Q. Would the coal be lighter in proportion to bulk than the pig iron? A. Yes, sir.
  - Q. Have you ever carried a coke cargo?
  - A. I have never carried coke.
  - Q. You know what coke is, of course?
  - A. Oh yes, I know what it is.
- Q. And you know that it is lighter than coal, is it not, that is, for the same bulk? [256]
- Q. I will ask you now, Captain, bearing in mind the distribution of weights as I have given them to you, the 1,900 tons in the lower hold, of which 600 were pig iron and the balance coke, and 600 tons stowed in one body immediately aft the main hatch, occupying a space 53 feet long by 23 feet wide at the aft end and 36 feet wide at the forward end; I will ask you whether or not, in your judgment, such stowage was good stowage?

Mr. HENGSTLER.—If your Honor please, I have to renew my objection. I wish to specify the objection in this regard: while it may be that the witness has testified that he has carried pig iron he has testified also that he never carried pig iron in conjunction with coke; it makes all the difference in the world what articles of merchandise he has carried in connection with pig iron because there are entirely different rules of stowage prevailing accordingly as the other articles are of one kind or are of another kind. We can receive no light whatsoever

from the fact that he has carried pig iron with some other articles on the question, as to whether pig iron carried along with coke must be carried in this way in which it was carried in this vessel or carried in some other way.

The COURT.—I will let him answer the question.

Mr. CAMPBELL.—And I will supplement this by further testimony if the answer of the witness is such as I personally believe it will be; it will be supplemented by other testimony which will emphasize the contrast.

- A. I should call it bad stowage.
- Q. Why?

A. Because the weight is unevenly distributed on the ship. The coke is so much lighter than the pig iron that there would be too much weight come in one place on the ship where the pig iron was stowed. [257]

The COURT.—Where was this pig iron stowed? Stowed back of the hatch?

Mr. CAMPBELL.—From the main hatch aft; from the after part of the main hatch for a length of 63 feet.

Mr. HENGSTLER.—And 60 tons in the between-decks.

Mr. CAMPBELL.—I meant in the lower hold of the vessel.

Mr. CAMPBELL.—Q. I will ask you whether or not, in your judgment, Captain, the restowage of the pig iron which was afterwards made at Buenos Ayres, which was as follows—I will put it this way:

the testimony in the record will show that after repairs were effected to this vessel at Buenos Ayres the cargo was restowed as follows: between the foremast and the main hatch 60 tons on the port side, and from 50 to 60 tons on the starboard side, loosely stowed; in a block forward of No. 3 hatch—and that, Captain, as I understand it, is the hatch that is just forward of the mizzen-mast, is it not? A. Yes.

- Q. About 22 feet in length, 4 feet high and the width of the vessel, about 300 tons, very closely stowed; aft of No. 3 hatch, in a block, in the run of the vessel, extending to the aft bulkhead, some 30 feet in length and a height of about 3 feet, quite closely stowed, and amounting to some 180 or 200 tons. I will ask you whether or not, Captain, in your judgment, that was better stowage than the original stowage of the pig iron?
  - A. I should say it was a great deal better stowage.
  - Q. Why?
- A. Because it divided the heavy weight over the ship more evenly.
- Q. Now, Captain, there is testimony in this record to the effect that it was necessary to stow this cargo in lumps so as to give the vessel the proper trim; I will ask you whether or [258] not the moving of the 60 tons—the 110 tons or the 120 tons between the main hatch and the foremast forward so as to be between the main hatch and the foremast would be offset in the trim of the ship by moving the other quartity further aft in the vessel?
  - A. I should say it was.

Q. Could you trim your ship so as to have her draw so much by the head and so much by the stern just as well by distributing this cargo over the bottom of the ship as piling it in one lump as per the original stowage? A. Just as well.

Mr. HENGSTLER.—Of course, if your Honor please, those questions are all considered as being subject to my objection?

The COURT.—Yes, all will be considered under your objection.

Mr. CAMPBELL.—I think that is all.

#### Cross-examination.

Mr. HENGSTLER.—Q. Captain, how long ago did you go to sea as a master of ships?

A. I have not been to sea for a little over eight years now.

Q. What have you been doing during those eight years?

A. Well, for the first five years I was Marine Superintendent for the American-Hawaiian Steamship Company here in San Francisco; since then I have been connected with steam schooners on the coast.

Q. Connected in what way?

A. Well, I am part owner, and for the last three years I have had a contract with the City of Oakland to take the city garbage out to sea and dump it, for which we employ a steam schooner.

Q. And when was it you were at sea in command of a sailing vessel the last time?

A. It is between 8 and 9 years ago.

Q. What vessel was that?

A. That was the "Tillie E. Starbuck." [259]

Mr. CAMPBELL.—Just allow me to interrupt you, Mr. Hengstler to ask one question right here. What size vessel was she, Captain?

- A. She was 2,031 tons gross; 1,929 tons net.
- Q. What was her dead weight capacity?
- A. About 2,900 tons.

Mr. HENGSTLER.—Q. Did you ever carry pig iron in the "Tillie E. Starbuck"?

- A. Yes, carried a great deal of it.
- Q. You carried a great deal of pig iron?
- A. Yes, sir.
- Q. Between what places?
- A. Between New York and Portland, Oregon, and between New York and San Francisco.
- Q. You say the "Tillie E. Starbuck" was a full-rigged ship? A. A full-rigged iron ship.
- Q. Do you know what the French vessel "Duc d'Aumale" is?
  - A. Only from what I have heard here to-day.
  - Q. You do not know the "Duc d'Aumale," do you?
  - A. No.
  - Q. You have never seen her, so far as you know?
  - A. Not to my knowledge.
- Q. You do not know whether she is a bark or whether she is a ship or what kind of rig she has?
- A. No, I do not, any more than judging from Mr. Campbell's description of the stowage, she must have been or she must be either a ship or a bark, one or the other, from the way he speaks of the hatches.
  - Q. That is your judgment from what you have

heard from Mr. Campbell? A. Yes.

- Q. But you know nothing about her at all?
- A. Nothing personally; no.
- Q. In loading a ship, Captain, can you tell how she should be loaded, without having any acquaintance with her at all?
- A. Well, that is a part of every ship master's education. It is a part of his work to learn and superintend the stowage of cargo; he judges by the model of the ship that he is loading, [260] the shape of the ship and her size and her dimensions and from the cargo that is to go in her.
- Q. And it depends entirely upon the model and upon the size and upon the form and upon the proportions of the ship as to how she should be loaded?
  - A. A great deal depends upon that, yes.
- Q. Would you be able to load a ship in this port, if you were asked to load her and had never seen her before?
- A. Well, as soon as I would examine the ship to see what she was I should be able to load any ship and load her correctly.
- Q. You think even without knowing how she behaves at sea you would be able to load her safely, do you?
- A. I think I should, yes. I think I have had that experience that I should know.
- Q. Is the question of proper stowage according to your idea a theoretical question? Can it be settled theoretically, or is it necessary that one should have some practical experience with the vessel itself?

- A. Well, your practical experience with the vessel itself would help you.
- Q. It would help you very much, would it not, Captain? A. It would help you, yes.
- Q. For the purpose of its being safe in stowing her, and that she would behave well after the stowage, you would have to know how she behaved in the past with similar cargo, would you not?
  - A. That would be an assistance.
  - Q. Is it not necessary?
  - A. Not entirely necessary, no.
  - Q. You would not say it was necessary?
  - A. Not necessary, no.
- Q. Would you be taking chances in loading a vessel that you [261] did not know anything about, so far as her past behavior is concerned?
- A. I do not think so; I think any thorough seaman, judging the vessel as he found her, the shape of the vessel, the model of the vessel, he would know how to load her. If he knew his business he would.
- Q. Does your answer apply to the loading of the vessel with any kind of cargo or only to particular cargo?
- A. Well, I think any kind of cargo. As long as he knew the cargo his first question would be what the weight of the different cargoes would be, and if he knew his business he would be able to distribute them in his ship to make her seaworthy.
  - Q. You would be able to do that?
  - A. I should, I think; yes.
  - Q. But you would be greatly aided if you knew

(Testimony of Eben Curtis.) something of the ship and her past, would you not, in doing it properly?

- A. It would help, it would help.
- Q. Supposing you had a brand new ship that had never sailed before, a ship that has been recently constructed, would you without any aid from anybody be able to load her with any particular cargo safely, or would you consult someone?
- A. Oh, I think I would be able to load her without consulting anybody, and load her right.
- Q. Well, if you wanted to be sure about it, would you consult anybody?
- A. I do not think I would unless it was some cargo I was thoroughly unfamiliar with, and then I would have to get the weight and the form it occupied per ton.
- Q. You would not consult the builder of the ship, would you? A. It is not necessary at all.
- Q. Do you think the builder of the ship could give you any aid in stowing an entirely new ship? [262]
- A. Well, the aid would be on the ship. If the builder of a steel ship would furnish the plan of the vessel, that plan would be there for the Master to look at, and when he had seen that plan and studied it a little he would know how to load that ship.
- Q. If you saw the plan of an entirely new ship, you would know how to load the ship, you would know how she was going to behave with any particular cargo in the future, would you?
  - A. I think I would get very near to it.
- Q. You would feel pretty nervous about it, Captain, would you not?

- A. No, I do not think I would at all.
- Q. Would you feel sure that that cargo was properly loaded simply by looking at the plan of the ship and not consulting the builder as to its construction?
- A. I have had a long experience with ships and I never did consult the builder yet; I never have had occasion to.
- Q. Did you ever load a ship for the first time, when she went on her first trip on the ocean?
  - A. No, I never have.
- Q. And that is the reason why you never consulted the builder, is it not?
- A. No, not at all; I do not think that would make any difference at all, so far as the builder goes.
- Q. I want to be sure about your position in this regard, Captain; you think past experience with a ship is not necessary for the purpose of stowing her with any particular cargo safely?
- A. No, I do not think it is, not if the man knows his business.
- Q. You say that that was purely a theoretical question, as to the stowage of the vessel?
  - A. What do you mean by a theoretical question?
- Q. That it is independent of past experience? [263]
- A. Yes, I think it is independent. I have had a great deal of experience myself. If I had not had that experience when I was a young man I would have consulted other people to get help.
- Q. I do not want to be unfair with you, Captain, I mean past experience with any particular vessel;

you do not need past experience with a particular vessel in order to stow her properly—is that your idea? A. Not necessarily.

- Q. You do not need it? A. No, I do not need it.
- Q. Captain, suppose you had two sister ships, built on exactly the same plan, exactly the same types of ships, would you say that they would have to be stowed in exactly the same way in order to make it proper stowage?
- A. I do not see why they should not be stowed just alike.
- Q. You have never heard or never read, have you, that two ships of exactly the same type have to be stowed different in accordance with the experience had with them in previous voyages?
  - A. I never did; no.
  - Q. You never heard that?
  - A. No, I never heard that.
  - Q. Have you ever carried coke, Captain?
  - A. No, I never did.
  - Q. And never in connection with any other cargo?
  - A. No.
- Q. Would you say that the carriage of coke in connection with pig iron—that is, the stowage of coke in connection with pig iron—would have to be made in the same way and in accordance with the same rules as the stowage of any other cargo in connection with pig iron?
- A. Well, I should say the same rules as to any other cargo of the same weight as the coke.
  - Q. What cargo would be of the same weight; for

instance, would [264] coal be of the same weight?

- A. No, coal is heavier than coke.
- Q. It is much heavier, is it not? A. Yes.
- Q. The rules of stowage as to coal in connection with pig iron would be entirely different from the rules for the stowage of coke in connection with pig iron, would they not?
- A. Yes. It would not be necessary to distribute the weight just the same with the pig iron and the coal as it would with the coke.
- Q. You would have to follow a different method altogether? A. Yes.
- Q. And so with any other cargo connected with pig iron, would you not, you would have to consult the weight of the cargo?
- A. You would have to consult the weight of cargo and the space it was going to occupy at the time.
- Q. Captain, can you tell about the strain which the pig iron, in the case of the "Duc d'Aumale" exercised upon the hull of the ship during the time when she was loaded according to the Rotterdam stowage, as compared with the time she was loaded under the Buenos Ayres stowage, which was the greater strain?

A. The strain under the original stowage would come more in one spot. It would not be distributed. For instance, there is a great pressure up under the ship as she goes down in the water. The water pressure is very strong pressing up. If you put the weight all in one place the pressure presses the other parts up, and right there where that heavy weight

stops is a weak spot in your ship under that stowage; whereas, if you spread the weight out more over the bottom of the ship, more forward and more aft, then the pressure on top and the pressure underneath is more equalized. [265]

- Q. On what part of the ship was the pressure exercised during the original stowage—the stress?
- A. The great stress would be at the end of that pile of pig iron, both the forward end of it and the after end.
- Q. Captain, would not the stress be exercised upon the whole area which that pig iron covered in the hold of the ship?
- A. Yes, but you would have the water pressing up underneath on the ship, with the same pressure underneath her, with an unequal weight on the bottom of the ship pressing down to offset the pressure of the water underneath.
- Q. But the pressure on that part which was covered was uniform, was it not?
- A. Yes—well, you mean under the pile of pig iron, do you?
  - Q. Yes.
- A. That is uniform, but becomes a weak spot at the end of the pile, or they have not got the same pressure down to offset the pressure of the water underneath.
- Q. If you put any iron in that weak spot then there would be a stress on the weak spot, would there not, which before that did not exist?
- . A. If you spread your iron out to cover more of

the water you would have a more even pressure down on your ship. As she was stowed the second time, as I understand it, there was a pile put pretty well forward, between the forehatch and the main-hatch, and a pile right in the run of her, at the very aft end, and a pile practically in the same place where there was originally; instead of being in one pile it was divided into three piles which spread over the bottom of the ship and made a more equal distribution of the weight.

- Q. Captain, can you compare the parts of the ship on which those three piles were afterwards spread, so far as their [266] strength is concerned? Which is the strongest part of the ship?
- A. Well, the strongest part of the ship is really the ends of the ship, more especially the forward end.
  - Q. In every ship? A. Yes, sir.
  - Q. Would that be so in every ship, Captain?
  - A. I think so, in every ship.
- Q. Now, Captain, do you know that, or are you merely guessing?
- A. I am not guessing at all. The strongest part of the ship is the forward end of it. She gets the hardest usage than any part of the ship.
  - Q. How about the other extremity, the stern?
- A. The stern does not get the hard usage that the bow gets.
- Q. How does it compare in strength with the middle part of the ship?
- A. Well, in some ways the stern is stronger than the middle; in some ways.

Q. In what ways?

A. In her up and down strain; with the stern of the vessel you pull straight and force the edge more,

Q. Captain, if it is a fact that the stern of a ship is the weakest part of the ship, and the portion of the ship on which under the original stowage this pile of pig iron was lying is the strongest part of the ship, would you still adhere to your original opinion that the second stowage would be better because it distributed the weight better?

A. I do not know that I understand just what you mean.

Q. If it appeared as a fact that the stern of the ship is the weakest part of the ship, and particularly with the "Duc d'Aumale" that it is the weakest in that type of a vessel, would you still say that some of that heavy pig iron should be stowed in the stern of the ship?

A. I think you would have to have some of it stowed in the [267] aft end of the ship and some in the forward end and some in the middle; you must distribute your weight.

Q. And you would say so independently of the strength of those portions of the ship, that although the middle part is the strong part and the extremities are the weak parts, you would still put some of the heavy cargo into the extremities, would you?

A. I do not think the middle part is any stronger. The ship is built of a practical uniform strength.

Q. Captain, is it not a fact that the middle part, the part upon which this pig iron was stowed in the

space, is uniformly the strongest part of the ship; is not that the fact? A. I do not see why it is.

- Q. You do not see why it is? A. No.
- Q. But you do not know whether it is, or not, do you?
- A. I do not know that I do know exactly the strength of it.
  - Q. You do not know? A. No.
- Q. You certainly do not know whether it was in the "Duc d'Aumale," or not?
- A. No, I do not know anything about the "Duc d'Aumale."
- Q. Captain, can you tell to what extent a ship at sea rolls and pitches, and as far as stress and strain are concerned, can you tell that if you know nothing about it except what the weather is at the time, what wind is blowing?
- A. Well, only in a general way, from general experience.
- Q. The strain and the rolling would depend, besides upon the wind, upon what other elements?
- A. Something on the model of your ship and something on the amount of sail you were carrying to steady the ship, and then again on the class of sea. [268]
- Q. So, if you do not know the model of the ship you cannot tell what strain she suffers, can you?
  - A. Only as a general rule.
  - Q. You cannot tell, can you?
  - A. Not exactly, no.
  - Q. And you also know, do you not, Captain, that

the action of the sea cannot be read merely from the wind that is blowing?

- A. No. Your sea might be made up from a long distance from where you were at that time, made up by different winds.
- Q. Although a particular wind is blowing and recorded in the log-book, if it were the only cause of the sea, you would say the sea is moderate; nevertheless the sea may be exceedingly heavy, may it not, during the period while that wind is blowing?
- A. Yes, sometimes you get quite a heavy sea with very little wind, and a wind, perhaps, from a different direction from what the sea is.
- Q. Captain, are you sure that during your period of navigation the fact that a vessel rolls or pitches is entered in the log-book?

  A. It should be.
  - Q. It is not always, though, is it, Captain?
- A. I cannot say about that, whether it always is, for not; I know it always should be.
- Q. It always should be?
- A. Yes; that is what the log-book is for.
- Q. The degree of longitude and latitude is always entered, is it not?
  - A. That is always entered.
- Q. And the direction of the wind is entered usually, and the force of the wind? A. Yes, sir.
  - Q. It is always entered? A. It should be.
- Q. Well, is it not always entered? Is there not a special heading for those things in the log-book? [269]
  - A. There is a special heading for it, and if the log

is properly kept it should be there.

- Q. But there is no special heading for recording the fact whether the vessel pitches or rolls, is there?
- A. Well, there is always a place for the making of any general remarks.
- Q. And in that place for general remarks, you put, among other things, the way the vessel acts, if she acts extraordinarily, do you not?
  - A. Yes, anything out of the usual.
  - Q. Is rolling at sea something out of the usual?
  - A. No.
- Q. Captain, who asked you to come here as an expert witness on these questions you have been asked about? A. Mr. Campbell.
  - Q. How long ago?
- A. Oh, I think some two or three months ago was the first time he spoke to me about it.
- Q. Did Captain Meyer, or anybody from the firm of Meyer, Wilson & Co., anybody from their office ever ask you?
- A. No, I don't know anybody connected with that office.
  - Q. They did not speak to you about it?
  - A. No. I only know them by reputation.
  - Q. Have you read over the testimony in this case?
- A. No; I don't know anything about it except what I have seen here to-day.

### Redirect Examination.

Mr. CAMPBELL.—Q. Captain, has any conversation that you have had with me influenced your testimony at all? A. Not in the least.

- Q. Would the knowledge of how a vessel might act in a seaway, affect your judgment as to the strain which would be produced upon her hull by the stowage of pig iron in one lump as described in this case? [270]
  - A. Just repeat that once more, please.
- Q. I say would any knowledge as to how the vessel might act in the seaway affect your judgment as to the strain which would be produced upon the hull of the vessel by the storage of the pig iron in one body as described in my previous question?
  - A. No, I don't think it would.
- Q. Would the way in which a vessel might act in a seaway affect your judgment as to the storage of the cargo with respect to the stiffness of the vessel in any way? A. Yes.
- Q. For our enlightenment, Captain, just what do you mean by the stiffness of the vessel?
- A. Well, if you put too much weight in the bottom of the ship and not enough high up to counter-balance it the ship will not lay over so quick, so easy; if she gets rolling in a sea, she is bound to roll, nothing can stop her rolling, but if she is too stiff she goes over and comes back with a quick jerk and goes back the other way with a quick jerk, which is very hard on a ship; but if she is loaded what we call just right, just stiff enough, she goes over more gradually and fetches up more easily and starts to come back without that jerky motion which is so hard on the spars of a ship.
  - Q. With respect to the question of stiffness would

or would not knowledge of the behaviour of a vessel in a seaway help you in determining what was the proper distribution of the weight of the cargo so far as up and down distribution is concerned?

- A. It would help you some, but the way the cargo is stored, whether it is stored right or not, more depends on that as to the action of the ship herself, whether she acts bad or well.
- Q. You said there might be a difference as to the rules in stowing coke and iron or coal and iron; which would be the worst stowage, iron lumped in one body with coke or iron lumped [271] in one body with coal?
  - A. Well, they would be bad in either case.
  - Q. But comparatively speaking?
- A. Comparatively speaking the coke would be worse than the coal.
  - Q. Why is that?
  - A. Because it is not so heavy.
- Q. The 60 tons of pig iron which was stowed in the between-decks in this particular case, was stowed there for the purpose of counteracting that stiffness that you spoke of?

  A. I suppose so.
  - Q. It would make her roll easily?
- A. It would make her roll easily.
- Q. If they had not been there she would have been too stiff?

A. Any ordinary vessel would. It seems to me from the distribution of the cargo, that she had too much in the hold, more than she should have. It seems to me she had rather more weight in the hold

in comparison with what she had between decks. That again would depend a great deal on the dimensions of the ship; that I do not know.

- Q. That is a pure theory, a general theory, that there should be two-thirds in the bottom and one-third in the between-decks?
- A. Different ships are different about that according to their beam and depth.

Mr. CAMPBELL.—Q. That is for the purpose of arranging the stability of the ship as far as stiffness is concerned? A. Yes, sir.

Mr. HENGSTLER.—Q. If it should appear that in this particular vessel the pig iron in the bottom was placed in one lump on top of the bottom, which is the strongest part of the [272] vessel, you would call that proper stowage, wouldn't you?

- A. No, sir, I should not.
- Q. You would not call it proper stowage even although it covered a large area, and that large area is the strongest part of the bottom?

A. That part of the ship would not be any stronger than the part forward or the part after.

- Q. You still adhere to your opinion that the stern part is just as strong as the part in which it was stowed?
- A. This ship, the way she was stowed, had a long space without any pig iron in it.
- Q. Would you be willing to admit that if she was actually stowed as she was, by people who had had past experience with her, who knew how she behaved on past occasions, with that kind of cargo and simi-

lar cargoes, would you be willing to admit that they were likely to know more about how she should be stowed than you who had never seen her and do not know anything about her construction and as to her lines or type? Would you be willing to admit that?

A. It looks to me as though the master of the ship must have realized when she was discharged at Montevideo, that she was stowed wrongly or else he would not have restowed her.

- Q. You assume that the master restowed her differently?
- A. I assume that, yes, because that is part of his duties.
  - Q. You assume that? A. Yes, sir.
- Q. Supposing it appeared that as far as rolling is concerned she behaved very well under the original stowage, but on a later voyage from Buenos Ayres to San Francisco she pitched more, what would you say to that? Which was the better stowage?

A. Well, the second stowage was the better stowage, no matter what they report as far as pitching or rolling. [273]

Q. You would say so even although she behaved a great deal worse during the second part of the trip than during the first part?

A. I should say so; yes.

Testimony of Robert Gibson, for Libelants.

ROBERT GIBSON, called for the libelants, sworn.

Mr. CAMPBELL.—Q. Were you ever a ship-master? A. Yes, sir.

- Q. For how many years have you followed the sea? A. 39.
  - Q. Where do you live now? A. Alameda.
  - Q. In what class of ships did you sail as Master?
- A. Well, the last ship that I sailed was a four-masted iron bark. I have sailed for over 27 years.
- Q. Have you ever been in a three-masted iron or steel vessel? A. No, sir; not a three-master.
  - Q. What was the last vessel you sailed in?
  - A. The "Silberhorn."
  - Q. Over what waters have you sailed?
- A. I have sailed from Liverpool out here, Calcutta and all over the world, Calcutta and the China Sea.
- Q. How many times do you suppose you have run to Cape Horn in your experience?
  - A. I could not say; 18 or 20 times anyhow.
  - Q. How long is it since you have gone to sea?
  - A. Five years.
- Q. During those five years what were you doing ashore?
  - A. I have been doing nothing only living ashore.
- Q. What kind of weather would you ordinarily expect to encounter in the vicinity of the Horn on a voyage from the South Atlantic to the South Pacific, in the months of November and December?
- A. I generally prepared for some bad weather. [274]
  - Q. What do you call bad weather?
- A. When you get the ship down to three lower top-sails, or two lower top-sails; that is pretty bad weather.

- Q. Was that unusual?
- A. No, sir; not unusual down there.
- Q. Would such weather be usual or unusual in the place marked "D" on the chart which has been offered in evidence as Libelants' Exhibit "C," being a position to the northwest of the Falkland Islands?
- A. You generally have some strong breezes there, and northwest winds.
  - Q. Just state what you mean by strong breezes?
- A. Sometimes you have gales and other times you do not. You will have as bad weather down there as you would off the Horn sometimes.
- Q. How would such weather affect your vessel with respect to her rolling or pitching or taking water on deck?
- A. A ship will take water on deck if there is any sea on, and if you have heavy weather she is going to roll.
- Q. Would it be an extraordinary or unusual occurrence if you encountered weather there that would cause your vessel to roll and take water on deck?
- · A. No, sir.
- Q. State whether or not when you leave the Continent on a voyage to San Francisco, you would expect weather of that character in that vicinity.
- A. You would expect bad and good weather, yes.
- Q. Were you able to hear the testimony that I read this morning detailing the weather?
  - A. I cannot hear very well. I heard you read something that I could not hear what it was.
    - Q. I will read this to you. The captain of the

vessel was questioned and testified as follows:

- "A. Nothing happened particularly until the 22d of November.
  - Q. Where was the vessel on that day?
- A. The vessel was about [275] 49 degrees, 37 minutes south latitude, and 66 degrees, 21 minutes west longitude. On that date the weather was fine until 9 o'clock at night. The wind increased in force rapidly, and we had to take in all sails but the foresail, two lower top-sails, and the lower stay-sails. At 11 o'clock, the wind blew a storm and the sea became heavier very rapidly. At 12 o'clock, in a gust, we lost the topmast stay-sail and the mizzen stay-sail. In a while the sea became tremendous, and we lost the fore stay-sail. The ship not being stayed by the sails we had lost, she rolled terribly. The decks were full of water. The decks being full of water, and the ship rolling heavily, we could not get the exact soundings.

# Q. Could you pump?

A. No, sir; we could not pump. I went myself in the pump well, and I saw there was an increase of water, but we could not pump because the bottom of the pipe at each rolling was dry, the vessel being on her side. Another survey was made at 4 o'clock in the afternoon, and we saw the same thing, the sea being still very heavy, and the wind shifting to the southwest, the ship in a cross sea. We wore the ship around at eight o'clock. The sea was very high until the 25th of November at 8 o'clock A. M. On the 24th of November, coming around westerly at 2

o'clock P. M., we wore the ship around to take a starboard tack. I ordered the pumps to be sounded by the carpenter when the ship was upright, and the carpenter reported that he found one meter and 25 centimeters in the hold, so that the water had increased rapidly since the morning. After the wearing of the ship, I set one watch to the pumps, and ordered an examination of the life-boats made to see that they were in order. At 6 o'clock, the wind freshened again, big seas coming from every part; the decks [276] being always covered with water it was very difficult to work the pumps. At 6 o'clock, we found one meter, and 55 centimeters in the hold. At 6 o'clock, I called the crew aft and explained to them the situation, and we resolved to take refuge in the Falkland Islands for the saving both the cargo and the ship. At the same hour we kept her off, and made for the Islands.

Q. We do not need the further details until you get to the place where you beached the ship.

A. That is a few hours later. Both watches were relieving each other at the pumps every half hour, so they were working continually, and I saw that the water did not increase so much while the ship was running before the wind. The ship was steering very badly when we were close to Roy Cove. We entered the Cove at 4:30, and at 4:35 the ship was beached at 500 meters from the entrance of the Cove. At that time the sounding of the pump was 2 meters and 27 centimeters, the ship having a list of 6 degrees to starboard."

I ask you whether or not in your judgment that was weather which was usual and might be expected in that vicinity on a voyage of that kind at that season of the year or was unusual or extraordinary weather?

A. That is the usual weather. That ship was carrying a foresail all through. That ship never took that foresail in by his log-book. Her stay-sail blew away and I suppose some old sails. The foresail was set all that time. She never took it in.

Mr. HENGSTLER.—Q. You do not know that?

A. I know this by the log-book. The log-book is supposed to give every sail taken in off of the ship.

Mr. CAMPBELL.—Q. What kind of sails do you usually carry [277] on your vessel in preparation for rounding the Horn?

- A. Our best sails, and use them all we can.
- Q. When you are encountering bad weather such as you might expect on a voyage of that sort, what kind of sail do you carry?
- A. According to the weather. If it is blowing heavy we carry what sail the ship will stand. We use our judgment. If we can carry a foresail we know it is not blowing a heavy gale of wind,—if she is carrying a foresail. If you are running before the wind you might. If you are laying to with a foresail with a head reach, you cannot do it. A foresail is a big sail and takes all hands to handle it.
- Q. If you have got an extraordinarly heavy gale what do you trim down to?

- A. To two lower top-sails; perhaps even to one lower top-sail.
- Q. Would it be unexpected weather on a voyage of that kind if you are compelled to trim down to lower top-sails?
- A. No, sir. You always expect something of that kind coming round the Horn. You are always expecting bad weather, summer or winter.
- Q. Would the sea which would be raised by the weather of the character described, in your judgment be unusual, extraordinary, unexpected weather or the usual expected weather?
- A. You will get a sea most anywhere. You will get sea when calm weather has been on. As long as it has been blowing a few hours you will get a sea on.
- Q. That does not answer my question, whether the character of sea raised by this kind of weather, would be usual or unusual or unexpected?
  - A. No, sir, it is the usual sea.
- Q. What kind of weather do you customarily have in that vicinity?
- A. Sometimes good weather and sometimes changes. [278] Perhaps 4 hours blowing a gale of wind and at other times it would be moderate. You would be taking in sails a good part of the time working your way around the Horn.
- Q. If this vessel was carrying her foresail during all that time what in your judgment was the kind of weather she was having?
  - A. An ordinary good strong blow; an ordinary

(Testimony of Robert Gibson.) gale; it was not a heavy gale.

- Q. I will read to you the following testimony which the Master gave. On his direct examination he testified as follows:
- "Q. Now, Captain, will you describe the first parts of the voyage, referring to your log, day after day, with reference to the weather which you encountered.
- A. We left Brest on the 21st at 9 o'clock in the morning. There was a small breeze from the north, shifting from the north to west, and we sailed until the 26th of September, and had fine weather and calm sea. We encountered westerly winds with a choppy sea.
  - Q. On what day?
- A. The 26th of September. There was a swell until the 28th.
  - Q. What occurred on the 28th?
- A. The wind hauled to the southwest, freshening and increased, the sea coming heavy rapidly. The wind shifted to the northwest on the 28th at 2 o'clock in the morning. The weather cleared up, but the sea became very heavy. We had very violent squalls, especially during the watch from 8 o'clock in the morning until noon. The weather became cloudy again in the afternoon with squalls, the sea being very heavy, direction west, northwest. From 8 P. M. to midnight, the sea was still heavier, and the squalls more and more violent.
  - Q. Are you still on the 28th?
  - A. Yes, sir; on the 29th the [279] weather be-

came fine, and the squalls less and less violent, the wind decreasing rapidly, there being still a squall. There were times when the ship was rolling heavily, the sea coming from abeam. At 4 o'clock in the afternoon, we found an increase of water in the ship's hold. We found 23 centimeters at 4 o'clock. We pumped at once, and cleared the water from the hold in a quarter of an hour.

Q. What latitude and longitude was the vessel in on that day, the 29th?

A. 38 degrees, 28 minutes north latitude at noon; 17 degrees, 43 minutes west. The vessel was steering south 35 degrees west.

Q. Now, go ahead and tell what happened next.

A. We saw every day that water was increasing in the hold regularly, about one centimeter every hour."

Whereabouts would that location be with respect to the southern coast of England?

A. It is always off the coast; I cannot say without a chart.

Q. Off to the southwestward of the coast?

A. Yes, sir, it is getting down towards the trades I should think.

Mr. HENGSTLER.—Q. Is it about parallel with the coast of Spain?

A. Somewhere down there; I could not say very well without a chart. I cannot tell exactly now.

Mr. CAMPBELL.—Q. (Continuing.) "Q. What did you do with the pumps during that time?

A. We pumped regularly, morning and evening.

At 7:20 in the morning and 4:20 at night.

- Q. For how long a time each time?
- A. About 20 minutes each time.
- Q. Did you succeed in controlling the inflow of the water by this pumping?
- A. By pumping 40 minutes, we cleared [280] the water from the hold."

Would you consider a ship in a seaworthly condition, if she was leaking so as to require 40 minutes pumping each day to free her?

- A. No, sir, I would not. All sails set.
- Q. I will describe this further on. That concludes the direct examination. On cross-examination he testified as follows:
- "Q. Is this entry in your log correct: From midnight of the 26th to midnight of the 27th, weather squally; nice breeze; swell; all sails set.' In the second watch, 'Squally weather; nice breeze; all sails set.' In the third watch, 'Squally weather; nice breeze; all sails set.' In the fourth watch, 'Squally weather of little strength; a fine breeze; all sails set.' In the next watch, 'Squally weather; nice breeze; all sails set.' Next watch, 'Cloudy; fine breeze; a few squalls; all sails set.' The next day, 'From midnight of the 27th to midnight of the 28th. In the first watch, 'Squally weather; strong rain; the wind blows to the southwest, and shifts to the northwest; gaff top-sails and main jib torn, royals and upper topgallant-sails and stay-sails and spanker taken in.' In the next watch, 'The same kind of weather; strong breeze; a large swell from the northwest; the

topgallant-sails taken in; unbent the main jib; violent squalls; strong winds; heavy sea; set the topgallant-sails and mizzen stay-sails.' Next watch, 'Cloudy weather and squally; strong breeze; heavy sea from the west, northwest; the same sail as during the preceding watch.' Next watch, 'Squally weather; strong breeze; furled main-sail at six o'clock.' Next watch on the same day, 'The same weather; very strong swell; violent squalls.' The next day, 'Midnight of the 28th to midnight of the 29th.' In the first watch, 'Fine weather; [281] some squalls; strong breeze becoming less at the end of the watch.' Second watch, 'Fine weather; fine breeze; set the mainsail; royal, spanker and staysail.' In the next watch, 'Fine weather; fine breeze; all sails set.' In the next watch, "Squally weather; the sea falls more and more; all sails set; tested the steam gear; found an increase of water in the hold; sounded 23 centimeters; cleared the pumps.' In the next watch, 'Fine weather; the breeze softens; all sails set.' The next watch, 'Fine weather; light breeze; all sails set.

And on that day, did you make any notation in your own handwriting on the log-book with reference to the discovery of water in the hold?

A. Yes, sir, I wrote at the foot of the log not to fail to sound at every watch, and to give an account to the captain; if the water rises slowly and regularly, they must pump in the morning at 7:30 and in the evening at 4 o'clock.

Q. Does that log correctly state the facts as they

(Testimony of Robert Gibson.)
occurred at the time with reference to the character
of the weather?
A. Yes, sir.

- Q. During all of this time, or any part of this time, was your ship rolling? A. Yes, sir.
- Q. Was that the natural roll of an ordinary ship in that kind of weather, or was it an extraordinary rolling?
- A. The rolling was caused by this wind which started at the southwest, and shifted to the northwest, the sea having become very heavy by the cross seas, and when the wind shifted to the northwest, the wind decreased, and the vessel not being stayed by the sails rolled heavily.
- Q. Is it not usual if a vessel rolls very heavily, that is [282] more than is expected of her, to make an entry in the log that the ship has been rolling?
  - A. Generally, but it was neglected.
- Q. Was there a laboring of the ship prior to the leak starting, which was unexpected or unusual?
- A. Yes, sir, the day after that night, the wind shifted from the southwest to the northwest.
- Q. Was the laboring of the ship upon that occasion very extraordinary?
- A. The ship labored less than she did later after that storm at the Falkland Islands, but she did labor very much.
- Q. Is it not usual for any ship to labor more or less in a cross sea without making water?
- A. Certainly, the 'Duc d'Aumale' itself did it many times, probably, but this time she sprang a leak.

- Q. Then that must have come from some weakness of the ship before she started, did it not. There must have been some weakness?
  - A. I don't think so.
- Q. How can you account for the ship springing a leak in weather which was fine, all excepting during one or two days at the most, and that weather not very bad, no storms?
  - A. I cannot give any other explanation.
- Q. Then the only explanation that you have to give is that the ship strained in this kind of weather, and started a leak. That is the only explanation you can give? A. Yes, sir.
- Q. After the leak was started, how long did the good weather continue?
- A. Variable weather, up to the storm that we had in the west of the Falkland Islands.
  - Q. About what date was that?
  - A. The 22d of November." [283]

Now, Captain, I will ask you what your judgment is of the character of weather which was described by the Master in his testimony. Was that the usual, ordinary weather that you might expect or unusual, extraordinary weather?

- A. Just the usual, ordinary weather.
- Q. How would you describe it yourself in your own language, what kind of weather would you call it?
- A. Ordinary weather, just as it was; it is entered in the log that way. They never have had their upper top-sails in. The topgallant-sails were furled

(Testimony of Robert Gibson.) one night, I think it was.

- Q. If you were starting from Rotterdam or Brest, on a voyage to San Francisco, would you expect to encounter weather of that character in that vicinity?
  - A. Yes, sir; I should expect to.
- Q. Would that weather in your judgment, produce any unusual strain upon the ship?
  - A. No, sir; it should not.
- Q. If that ship had been seaworthy, in all respects sound, well founded, her cargo well and properly stowed, in your judgment would such weather have so strained her as to cause her to have sprung a leak?
  - A. It should not.

Mr. HENGSTLER.—That is subject to my objection.

Mr. CAMPBELL.—It is so stipulated.

- Q. Would the sea that would be created by weather of that character, be an unusual condition of sea or the usual condition as you might expect?
  - A. It is the usual condition.
- Q. Is it anything unusual to have water on your decks? A. No, sir.
- Q. If a ship has been subjected to unusual rolling such as might strain her, would you expect to find an entry to that [284] effect in the log?
- A. You would enter it in the log that the ship was rolling heavily.
- Q. Now, Captain, have you ever carried a cargo of pig iron?
- A. Not altogether loaded with pig iron. I had some pig iron and coke and all sorts of cargo from

Antwerp and Liverpool. I had a full cargo of tin out from Liverpool and arrived with a general Antwerp cargo.

Q. Does that often include pig iron?

A. It might be pig iron. It is some time since I had such a cargo.

Q. The testimony in this case shows that on the voyage in question, the "Duc d'Aumale" carried 2,660 tons of cargo, of which 1,900 tons were carried in her lower hold and 760 in her between-decks. Of the 1,900 tons which were carried in her lower hold, 660 were pig iron. This pig iron was stowed in one body immediately abaft the main hatch, square of the main hatch, in a body 63 feet long by 23 feet wide, at the after end and 36 feet at the forward end. In her between-decks were 60 tons of pig iron. I will ask you whether or not in your judgment the stowage of that pig iron in the lower hold was good stowage?

A. I don't think it was.

Mr. HENGSTLER.—I object to the question upon the ground that the witness has not qualified himself as an expert of stowage in a case of pig iron and coke being carried in any vessel whatever. I object to it furthermore upon the ground that the question is not complete in that it describes the condition of affairs of the "Duc d'Aumale" in an imperfect way. [285]

Mr. CAMPBELL.—In what way? I will fill it in.

Mr. HENGSTLER.—In so far that it does not mention the fact that the entire cargo space not taken

(Testimony of Robert Gibson.)
up by the pig iron was filled with coke. You can put
that in as far as that is concerned.

Mr. CAMPBELL.—Q. My question was of the 1,900 tons in her lower hold 660 tons were pig iron stowed in this one body. The balance was coke, which filled the lower hold practically in the way that all cargoes do.

- A. The ship was full of cargo?
- Q. Yes.
- A. 600 tons of pig iron in the lower hold?
- Q. All in one body? A. What length?
- Q. 63 feet long, immediately abaft of the main hatch. Before I ask you to answer that question I will ask you this: have you superintended the stowage of cargo at all?
- A. I have. Loading a cargo is always done under the supervision of the master.
- Q. How many years of experience did you have at that?
- A. I have been master of ships 29 years, somewhere about that, I guess.
- Q. I understand that included cargoes of all character? A. Pretty nearly everything.
- Q. You have not carried a mixed cargo of coke and pig iron? A. No, sir.
- Q. But you have carried the two separately with other cargoes? A. Yes, sir.
- Q. My question is whether or not in your judgment the stowage of that pig iron in one body in a vessel with coke as described was good stowage? [286]

Mr. HENGSTLER.—I desire to object to the question upon the ground, in addition to the grounds already stated, that the witness is disqualified from testifying as an expert, because he stated expressly himself that he has had no experience whatever in the stowage of this combination of pig iron and coke.

The COURT.—Let him answer the question.

A. I say it was not good stowage.

Mr. CAMPBELL.—Q. Give us your reasons for that?

A. The reason is there is too much in one space; it ought to have been distributed more; it is all in one bunch—too much of a weight in one place.

Q. After this vessel was repaired at Buenos Ayres, her cargo was restowed so that she had between the foremast and the main hatch 60 tons on the port side and 50 or 60 tons on the starboard side loosely stowed? A. That would be 110 tons.

Q. 110 to 120. In a block forward of No. 3 hatch 22 feet in length, 4 feet high and the width of the vessel, 300 tons very closely stowed. Aft of No. 3 hatch in a block in the run of the vessel extending to the after bulkhead some 30 feet in length and a height of 3 feet to 35 feet, quite closely stowed and amounting to some 180 to 200 tons?

A. She had that aft?

Q. Yes. I will ask you whether or not in your judgment that was as good stowage or poorer stowage than the stowage which she first had when she started on the voyage?

A. A great deal better stowage because it is dis-

tributed fore and aft on the bottom with the pressure of the water up on the ship. Take, for instance, anything and put a weight on it; we will say a lath, put a weight on any lath right in the center [287] where that full cargo was and the ends will come up. If you put something on the ends of it it will keep it down.

- Q. I will ask you whether or not in your judgment such stowage of the pig iron in one body would be worse or better stowage as the other cargo was lighter cargo or heavier cargo?
  - A. In one body it was worse stowage, certainly.
- Q. You do not catch my question. I will ask you whether or not in your judgment such stowage would be worse stowage or better stowage if the remaining cargo was lighter cargo or heavier cargo. I will put the question this way: in your judgment would such stowage of the pig iron in one body produce a greater strain on the vessel if the remainder of the cargo was coke, than it would if the reamnider of the cargo was coal?
- A. Yes, sir, it would, because the coal is heavier and it would be more weight in the forward part or the after part; in both ends there would be more weight.
  - Q. A better distribution? A. Yes, sir.

Cross-examination.

Mr. HENGSTLER.—Q. How long is it since you have commanded a sailing ship?

- A. About five years.
- Q. What was the last ship that you commanded?

- A. The "Silberhorn."
- Q. What was she?
- A. She was an English ship; an English four-masted bark.
- Q. Has your experience as a master or seaman, generally been with English ships?
- A. I have always been in English ships. I am an Englishman myself you might say. I am a Nova Scotian. I have always been under the British flag.
  - Q. Have you ever commanded French ships?
  - A. No, sir.
- Q. Do you know whether or not French ships are built on the [288] same plan, and according to the same type as British ships?
- A. I don't know; I could not say for certain. I never went aboard to examine them. They are a little different on deck in equipment. They seem to carry more houses. I cannot tell anything about them.
- Q. They are substantially different from the English ships generally speaking, are they not?
- A. I could not say. I cannot say whether they are.
- Q. Well, you just stated some differences that are usually found in French ships, which you do not find in British ships?
- A. Some difference on the deck fixings but I do not know anything about the houses. I never built an iron ship and I don't know whether the hulls are the same or not.
  - Q. Do you know the French bark "Duc

d'Aumale"? A. No, sir, I do not know her at all.

- Q. You have never seen her?
- A. No, sir, I have never seen her.
- Q. Do you know her dimensions?
- A. No, sir, I don't know nothing about it. I have never seen her or heard anything about it. I don't know the ship's name now that we are talking of.
- Q. Nevertheless you think you are capable of telling how she should be loaded?
- A. I can tell pretty nearly by other ships, how she should be loaded.
  - Q. What do you mean by "pretty nearly"?
- A. Anyone that has been to sea can tell that a cargo 600 or 700 tons in one lump is not right in loading a ship.
  - Q. That is your general idea?
  - A. That is my general idea.
- Q. Suppose that lump of the heaviest cargo of the ship is [289] distributed over a large area, and that large area is the strongest part of your ship, would you not say that is proper stowage?
- A. If it is taken fore and aft of the ship it should be good stowage. Where it is in one lump it is not good stowage.
- Q. Would you say that you would put heavy cargo in the fore part of the hold?
- A. You have to put it there to trim the ship. You would not put it on in one place. You have to put cargo there to trim the ship. If you put it in one place you have light cargo in the ends. There was no heavy cargo in the forward end or after end.

- Q. Do you know where the 60 tons of pig iron in this case, were placed?
  - A. 60 tons in the between-decks.
  - Q. That was forward of the big pile in the bottom?
  - A. Yes, sir.
- Q. Don't you think that was sufficient trim for the vessel?
- A. I should think she ought to have had a little more in the between-decks. I think she had a little too much weight in the bottom.
- Q. Captain, who would you say was better able to judge of the proper stowage, a man who has never seen that vessel and knows nothing about her, or a man who has had experience with her and has known how she behaved in the past?
- A. A man that sails his own ship will know how she is trimmed and how she ought to be stowed better than a man who does not know the ship. Anyone who has been to sea will know that a ship is not stowed properly when her cargo is in one place. Anyone who is master of a ship will know that is not proper stowage, with that cargo in one place.
  - Q. No matter what kind of a ship she is? [290]
- A. No matter what kind of a ship she is. It is too much weight in one place with a ship like that and the ends light.
- Q. I want to be sure that you considered that question entirely independent of the type or the preparation of the ship, the cast of the ship, or the way she was constructed. These elements do not enter into it?

- A. If the ship is made purposely to carry a weight in one place that is a different thing. An ordinary sailing ship, as she is supposed to be should not have so much weight in one spot, with only you might say light weight at the ends.
- Q. You are speaking of the ordinary sailing ship with which you are familiar?
- A. I guess French ships are not so much different from English ships in that way.
  - Q. You say you guess at that?
  - A. As far as I can see.
- Q. Now, as far as the weather on the 28th of September was concerned, which has been described to you here, you remember that?
  - A. The 28th of September?
  - Q. The 28th of September? A. Yes, sir.
  - Q. You remember what that was?
- A. That was when she was coming down the coast after she left.
- Mr. CAMPBELL.—Q. The first gale after she left? A. Yes, sir.
- Mr. HENGSTLER.—Q. Now, what was read to you referred to the weather, did it not?
- A. The weather was not bad, I should not think. She had carried her upper top-sails all through; she had a southwest wind and the wind shifted to the northwest. Then she had a beam sea and commenced to roll. The wind got aft and they made more sail. [291]
- Q. Would you, from the description of the weather which you have read to you come to any conclusion

(Testimony of Robert Gibson.) with respect to the condition of the sea?

- A. The sea was from the southwest. The wind had been from the southwest for a day or two and shifted to the northwest, and that brought the wind aft on the sails, and she was going along with a side sea rolling.
- Q. You would say, according to your opinion, she was rolling heavily on the 28th of September?
- A. I don't know whether she was rolling heavily. I cannot tell.
  - Q. She was rolling? A. Any ship will roll.
- Q. You cannot tell me the wind that blew or the weather that prevailed at that time. You cannot tell whether she was rolling heavily or not?
- A. She might have been rolling heavily; I cannot tell. Any ship will roll when she gets a beam sea. Some will roll heavier than others, according to the way they are trimmed. I think she would roll heavily because she had so much weight in her bottom right in one spot.
- Q. Is the rolling of a ship dependent entirely on the wind that is prevailing at the time?
- A. Yes, sir, considerably. If you have the wind aft besides a beam sea on, she is going to roll. If you have a side wind your sails are in the wind, and you steady your ship from rolling. You have to carry sails to do so.
- Q. When you said in answer to a question of Mr. Campbell, that on September 28th the usual sea prevailed, you meant, did you not, the usual weather, the weather that may be expected at that time?

- A. In the Atlantic you always expect something of that kind and expect a sea. Any sort of a ship will stand a bit of a sea where she is carrying upper topsails. She may have some water on deck. That is a natural thing in an iron [292] ship loaded.
- Q. You have no opinion as to what kind of a sea was on, on September 28th?
- A. From what was read there must have been a sea on or some sort of a swell on when they had the wind from the southwest a couple of days—a day and night.
- Q. With the same wind is there always the same sea?
- A. The sea is made by the wind. The wind blows up the sea. If the wind is from one quarter for 24 hours you will get a sea. After the wind shifts you still have that sea until it goes down.
- Q. Don't you know that there may be an exceedingly heavy sea even though there is no wind at all?
- A. There is a sea that rolls in from where there has been a wind. There has been a wind somewhere to make that sea.
- Q. Even although there is no wind at the particular time, there may be a very heavy sea?
  - A. Yes, sir.
- Q. In that very heavy sea a vessel would roll heavily?
- A. She may; that is according to the way she is loaded. If she is loaded right she will not roll heavily.
  - Q. Is it not according as there is a heavy sea or

(Testimony of Robert Gibson.) smooth sea as to the way she rolls?

A. A ship will roll in a heavy sea, but she will not roll so much in a smooth sea.

Mr. HENGSTLER.—I think, if your Honor please, that is a very easy question for the witness to answer.

The COURT.—He does not understand the question. Repeat the question.

Mr. CAMPBELL.—Ask the question again. Read the question, Mr. Reporter.

(The reporter reads the question.) [293]

A. Yes, sir; she will roll in a heavy sea.

Mr. HENGSTLER.—Q. She will roll more in a heavy sea than in a smooth sea, will she not?

A. Certainly.

Q. So that the amount of rolling depends upon the condition of the sea, does it not?

A. Yes, sir, and according to the way a ship is loaded. A ship will roll heavier when—

Mr. HENGSTLER.—I move to strike out all of these volunteer answers, if your Honor please.

Mr. CAMPBELL.—Let him finish his answer.

Mr. HENGSTLER.—I want him to answer my question.

The COURT.—He has answered it.

Mr. HENGSTLER.—I do not ask anything about the loading at all. I move that that portion be stricken out, about the loading.

The COURT.—Strike it out.

Mr. HENGSTLER.—Q. You state that the amount of the rolling depends upon the condition of

the sea, does it not? A. Yes, sir.

- Q. And the condition of the sea does not depend on the wind alone, does it?
  - A. No, sir; I suppose not.

The COURT.—You mean the wind blowing, that is blowing at the particular time?

Mr. HENGSTLER.—Yes.

- Q. There may be a very heavy sea even although there is dead calm?
  - A. Yes, sir; dead calm, and the ship will roll.
  - Q. If she rolls she strains, does she not?
- A. I don't know. An ordinary ship, a well balanced ship, will not strain when there is no heavy sea and when she is not rolling so badly. A good ship ought not to strain when rolling.
  - Q. A good ship does not strain when she rolls?
  - A. No, sir. [294]
  - Q. Does not every ship strain when she rolls?
  - A. I don't think that they do.
- Q. Would you say that a ship strains if she is lying in a smooth bay at anchor?
  - A. She ought not to strain any.
- Q. Is there any strain on her when she is lying down here at anchor, do you know?
- A. I don't know how you mean. When there is no strain and nothing to hurt the ship?
- Q. I asked you whether there is a strain on the hull when she is lying in a smooth bay?
  - A. I don't think there is any strain.
- Q. Don't you know that the different parts of the ship are built of different strengths, one part being

very strong and the other part lightly built? Don't you know that?

- A. That a ship is differently built?
- Q. Different portions of a ship are not built equally strong?
- A. I suppose they are built according to the way they have to carry their cargo. They don't carry the cargo in the bows or stern. They put it in the strongest part of the vessel.
- Q. There is the stronger part and the weaker part of a vessel? A. I suppose so.
  - Q. Then there would be a strain on some part?
- A. I don't think there is any strain on a ship out here in the bay.
  - Q. Not when rolling? A. No, sir.
- Q. Suppose she rolls quite as heavily is there still no strain on her?
- A. I don't know. I expect there may be, but I cannot tell.
- Q. You stated, I believe, that in your experience as a Master you have loaded pig iron? [295]
- A. I have carried a full cargo of pig iron from Androssin to New York, in a wooden ship.
  - Q. With nothing else in? A. Nothing else.
- Q. Was that the only time that you carried pig iron?
- A. I suppose I have had pig iron in, 50 or 100 tons, I cannot say when because we loaded a general cargo at Antwerp. We get glass, cement and we may get pig iron.
  - Q. Answer my question?

- A. I cannot tell any more than that.
- Q. Answer my question.
- A. I am answering it as nearly as I can.
- Q. It is not necessary to go into other things. On those occasions when you loaded at Antwerp, you carried pig iron just as ballast?
- A. Not as ballast, no, sir. I never carried any cargo as ballast. I generally had a full cargo.
  - Q. You say you might have had pig iron?
- A. I might have. It is so long since I loaded it that I don't remember.
- Q. You do not know whether you loaded pig iron or not? A. I cannot say for certain.
  - Q. Did you ever carry coke?
- A. I remember carrying coke—not a full cargo. I have had 200 or 300 tons of coke in the ends of the ship.
  - Q. In a comparatively small space in the ship?
- A. In a space in the ship that they wanted to fill in and they filled it up with coke.
- Q. What was the rest of the ship's cargo when you carried coke in the ends of the ship filled with? What was the rest of the cargo?
- A. I started to tell you that a few moments ago. I carried all sorts of cargo, glass, cement and different things,—an Antwerp general cargo.
  - Q. And the coke was in the ends? [296]
- A. Some coke as well as something else in the ends. Some of it may have been amidships.
- Q. But as far as you remember, most of it was at the ends?

- A. There was some part in different places; I had coke many times.
- Q. You mean to say that the coke was distributed all over the general cargo?
  - A. Yes, sir. You put coke over a thin cargo.
  - Q. You do?
  - A. Yes, sir; coke is filled in.
- Q. Don't you know that one of the first rules of stowage in connection with coke is, that it must never come in connection with general stowage?
- A. You can separate it. It is always boarded between.
- Q. Is that not the reason you put it in the ends and bulkhead it over?
- A. It is bulkheaded, and even you put old cans underneath.
  - Q. Coke is light cargo, is it not
  - A. Yes, sir. I think coke is a nice cargo.
- Q. Is not that the reason, because it is light—one of the reasons—that if you carry it in a ship you carry it in the extremities of the ship because the extremities can stand it, because it is the weakest part of the ship?
- A. It is not. It is because the ship is getting too deep down to her marks in the water, and they fill the space up with coke.
- Q. Would you consider it good stowage to put pig iron in the stern of the ship?
- A. Not in the stern of the ship, no; not right in the stern, but you have to distribute perhaps 20 or 30 feet away from the stern of the ship some of it, and in dif-

ferent places. You distribute it along the bottom of the ship.

Q. Is not the reason why you do not put pig iron in the stern, [297] that the stern is too weak to carry that cargo?

A. She will not carry much there. The ship is sharp and she goes down in the sea.

Q. Is that the only reason why you do not carry pig iron?

A. There are different reasons. You would not carry it because you cannot carry much coke on account of putting the ship down too deep in the water.

Q. Is that the only reason? A. I don't know.

Q. Have you ever, in all your experience as a seacaptain, known of heavy cargo being put in the ends of a ship? Is it not a plain, ordinary rule of stowage not to put heavy cargo in the ends of the ship?

A. Not in the ends. You do not put heavy cargo in the ends of a ship, that is, the pig iron. It does not go in the ends of a ship. It goes quite a piece away from the ends of the ship?

### Redirect Examination.

Mr. CAMPBELL.—Q. Captain, what does the comparative severity of the rolling of a ship at sea depend upon?

A. What does the rolling depend upon?

Q. Yes, the amount that a ship will roll in a given sea. What would that depend on?

A. As affects a roll; it would depend on the way she is loaded.

- Q. In what respect does the way she is loaded affect it?
- A. If she has too much weight in her bottom she will roll very quick. If it is distributed rightly she will roll easily.
- Q. When she has too much in her bottom and rolls quickly, what do you call a ship so loaded?
  - A. She is apt to strain.
  - Q. What do you call that trim of the ship?
  - A. She is not well loaded. [298]
- Q. What do you call it from your nautical experience?
- A. I forget now. She is not trimmed right or something or other.
- Q. On the 28th or 29th of September, during that wind, the log shows that the ship was on a course south 35 degrees west, and the wind shifted from the southwest to the northwest. What kind of wind did she have when it shifted to the northwest?
- A. She had the wind southwest before, and it shifted at 8 points to the northwest.
- Q. After it shifted, did she have the wind aft or how? A. She had it aft.
- Q. In your judgment, would a ship strain more or less when she is running before the wind and before the sea, or running into it?
- A. She would strain more when she is running into it.
- Q. If you had a vessel that was leaking at the butt ends, would you expect her to leak more when she was

running into a sea or when she was running before the sea?

- A. When she was running into a sea.
- Q. Why?
- A. Because it strains her more. Driving a ship into a head sea it will strain her more than running with the sea.

#### Recross-examination.

Mr. HENGSTLER.—Q. You said that rolling depends on the way she is loaded. You mean the way she is loaded is one of the causes of rolling, don't you? You do not mean that it is the only cause of rolling, do you?

A. It is not the only cause of rolling. The sea is one cause and the way she is loaded is another—the way she rolls.

- Q. The sea has a good deal to do with it?
- A. Yes, sir. [299]

(It is stipulated between the proctors that the Court in passing on the question of liability may consider that this cargo received the character of damage as alleged in the libel, and that after the question of liability is determined the case may be referred to the Commissioner for the purpose of determining the amount of damage.)

Mr. HENGSTLER.—If the Court please, if scientific testimony is going to be offered here with reference to the strain upon the hull of this vessel due to the particular stowage which was used in this case, that will make it necessary for me, I think, to take the depositions of the builders of this vessel who are

the best judges on that particular question. Nevertheless, I am willing to submit the case to the Court in so far as we can at the present time, and to argue the legal points while your Honor is here. I will ask your Honor in that event to give me time to take the necessary depositions in Europe of these builders before your Honor decides the case, taking it into consideration, at the same time supplementing our oral argument with what argument may be necessary on account of those depositions.

Mr. CAMPBELL.—That is asking me to go a long ways, if your Honor please. They have taken depositions in Europe of the surveyors who surveyed this vessel and loaded the vessel immediately prior to her departure. To ask that the case be suspended until they can get the builders' depositions when they were fully advised of the character of stowage, and the character of defense, is going a long ways.

Mr. HENGSTLER.—This is not a question of stowage. It is a question of the structure of the ship. [300]

The COURT.—It would probably be better to postpone this matter then until the testimony is in.

Mr. CAMPBELL.—I am willing that that should be done if counsel understood my stipulation that way. I will give him that freedom. I will stand by my stipulation. I do not want to have any misunderstanding with Dr. Hengstler about this. What I thought he had in mind was that he might want to call someone in answer to the shipmasters. That I am willing to do, but to go back to the builders of the

vessel and take their depositions is a different thing.

Mr. HENGSTLER.—They are the only real judges with reference to the stowage of the ship in connection with the particular type of the hull.

Mr. CAMPBELL.—Her type is the ordinary type of a French sailing vessel. Dozen of her type come in every year.

Mr. HENGSTLER.—I will waive any depositions in regard to the testimony that has been heard to-day. I do not want any depositions with regard to that, but if Mr. Dickie goes on the stand with his scientific curves and stresses and things of that nature I want testimony to rebut him.

Mr. CAMPBELL.—We will call Mr. Dickie to-morrow.

The COURT.—We will see what his testimony is, to-morrow.

Mr. CAMPBELL.—I will limit his testimony as much as I can. We have not in our possession sufficient data—Mr. Dickie may correct me if I am wrong—to enable us to say there were so many tons of strain exerted on this vessel. I want to show the character of the strain that this kind of stowage produced on the vessel.

The COURT.—Not on this particular vessel?
[301]

Mr. CAMPBELL.—On this type of vessel. I may say this: It is a scientific explanation of the same kind of strain that Captain Curtis described, practically.

Mr. HENGSTLER.—If I can get along with him,

all right. If I know enough to cross-examine this witness intelligently I will not take up the time.

(An adjournment was here taken until to-morrow, Wednesday, January 17th, 1912, at 10 A. M.) [302]

Wednesday, January 17th, 1912.

## Testimony of Albert F. Pillsbury, for Libelants.

ALBERT F. PILLSBURY, called for the libelants, sworn:

Mr. CAMPBELL.—Q. Captain, what is your business?

- A. Marine Surveyor; Surveyor for the Board of Marine Underwriters in San Francisco.
- Q. Who comprise the members of the Board of Marine Underwriters in San Francisco?
- A. Most of the Marine Underwriters doing business in San Francisco.
  - Q. Do you hold a shipmaster's license?
  - A. Yes, sir.
  - Q. For what character of vessel?
  - A. Unlimited steam and sail.
  - Q. What was the last command that you had?
  - A. The "City of Pekin."
  - Q. The Pacific Mail boat? A. Yes, sir.
  - Q. Running to the Orient? A. Yes.
  - Q. How long have you been surveying?
  - A. Nine years.
  - Q. In this port? A. Yes, sir.
  - Q. What class of vessels have you surveyed?
  - A. All classes.
  - Q. Have you ever had an opportunity of examin-

ing any of these French sailing vessels that come in here? A. Yes, sir.

- Q. I will ask you to state whether or not they are all more or less of the same general type—the French vessels themselves?
  - A. On the whole, I would say so.
- Q. Have you ever had any occasion to survey any of the British sailing vessels, three-masted and four-masted barks which come into this port? A. Yes.
- Q. I will ask you to state whether or not there is any material difference in the construction and in the mould of the hull and in the rigging in the French ships and barks and the English [303] ships and barks?
- A. Not in those that were built at about the same period.
- Q. Well, if they do differ, in what respect is it, Captain?
- A. The older sailing ships were iron; those that were built prior to 1895; since then most all ships, steam and sail, are built of steel.
- Q. But so far as the mould of the hull is concerned, and the rigging of the vessel, is there any difference between the English and the French vessels?
- A. No material difference. Some English vessels are built wider than others and some French vessels are built wider than others. Some are built with a little different coefficient, that is, a little coefficient, in both English and French vessels. In the general design there is no difference.
  - Q. Did you have any occasion to survey the cargo

(Testimony of Albert F. Pillsburý.) of the "Duc d'Aumale" when she arrived here?

- A. I did.
- Q. Where did you find the pig iron stowed?
- A. According to my recollection there were about 660 tons in the cargo; 60 tons of that were stowed in the between-decks, about 30 tons on each side; and a block of about 300 tons abaft of the main mast; some 110 tons or 120 tons in the lower hold, forward of the main hatch, and the balance, some 180 or 190 tons, which would make up the 600 in the lower hold, abaft of the after-hatch and extending from that point out to the bulkhead aft; that is, extending from the hatch to the bulkhead aft. Of course, you understand that I am speaking of the lower hold. [304]

#### Cross-examination.

Mr. HENGSTLER.—Q. You are the surveyor for the underwriters here, are you not, the official surveyor?

- A. Yes, for the Board of Marine Underwriters.
- Q. Did you examine the cargo of this ship "Duc d'Aumale" when she arrived in this port, for the underwriters of the cargo?
- A. I cannot say whether I did or not. I examined the stowage of the vessel at the request of Meyer, Wilson & Company, who were the importers of the cargo.
- Q. Do you know who the underwriters of the cargo are in this case?
- A. It is my impression that it is the Hamburg Underwriters.
  - Q. Did not Meyer, Wilson & Co. depute you to ex-

(Testimony of Albert F. Pillsbury.) amine the stowage of that vessel in behalf of the Hamburg Underwriters, for the Hamburg Under-

writers? A. That may be.

Q. You do not mean to say that all French vessels are built on the same type? You qualify that by saying "more or less"? A. Yes.

- Q. There is a difference in their fineness of build; some of them are built broader and some of them—
- A. (Intg.) I have already said that some of them have a finer coefficient than others.
- Q. You say that on the whole, speaking broadly and approximately, there is no great difference in the mould of the French vessels from that of the English vessels; is that the idea? A. Yes, sir.
- Q. Which class of vessels is more strongly built in your opinion, generally speaking, the British ship or the French ship, of similar type?
- A. What do you mean to ask for, the workmanship or the design? [305]
  - Q. The structure.
- A. I think the British ships as a whole perhaps are of stronger design than the French.
- Q. Are not French ships, generally speaking, finer in their design in the extremities than the British ships—generally speaking, I say; I know there are individual differences always.
  - A. Do you mean to ask me that question?
- Q. Are not the French ships generally built finer in their designs, particularly in the extremities, than British ships?
  - A. Well, there are different classes of both nation-

alities. Some owners will start out with a certain block coefficient which is finer than others.

Q. Do you remember about this particular ship, the "Duc d'Aumale," whether or not her stern is finely built?

A. I do not remember exactly; it is my impression that it is.

#### Redirect Examination.

Mr. CAMPBELL.—Q. Just one matter that I forgot to ask you about. I wish you would take this piece of paper and show us how the butts or how the plates on the bottom and sides of steel vessels are butted, that is, when the butting plates are not overlapping plates?

Mr. HENGSTLER.—In steel vessels?

Mr. CAMPBELL.—Yes.

Q. Are you familiar with the way the French vessels are fitted?

A. To some extent; yes.

Q. Where plates are butting plates and not lapping plates, are they butted the same in practically all vessels?

A. Well, a plate—a butted plate would be the same, yes.

Q. Just mark that with the figure "1." What does figure one represent?

A. A butted butt, looking from the outside.

Q. What is the space between the two ends, which space is marked with a pencil "A"? [306]

A. Well, that is usually calked.

Q. What is that space? A. That is the butt.

- Q. Is the space between what?
- A. Two plates.
- Q. Is there anything put behind the ends of those two plates, beneath this space?
- A. Sometimes a small piece of metal; other times simply a calking-tool, placed together and they calk that and make it tight.
- Q. But on the inside of the plating is there anything put behind and across the two ends?
  - A. A butt-strap.
  - Q. That is indicated in the figure marked "2"?
  - A. Yes, sir.
- Q. Into this space between the ends of the two plates what is put for the purpose of calking or tightening?
  - A. Usually a piece of metal is calked in there.
- Q. Have you read the survey reports of the repairs that were made at Buenos Ayres on the bottom of this vessel?
  - A. I have, but it is some time ago.
- Q. If those survey reports refer to butts being calked by the insertion of a piece of steel, where would that steel be inserted?
- A. It would be on the outside at this point here (indicating).
- Q. In the parlance of the sea, what is that called, inserting that steel plate?
- A. The caulking; sometimes it is called a Dutchman.
- Q. Will you state whether or not the insertion and calking of a Dutchman in the space between the ends

of the plates is the usual and customary manner of calking and tightening the butt ends?

A. Yes, sir.

Mr. CAMPBELL.—I will offer this in evidence. [307]

(The paper was here marked Libelants' Exhibit "D.")

#### Recross-examination.

Mr. HENGSTLER.—Q. You say this is the general way of butting plates?

- A. It was; it is not in use any more.
- Q. It is not in use any more? A. No, sir.
- Q. Do you know whether that is the way in which the plates of the "Duc d'Aumale" were butted?
  - A. Yes, sir.
  - Q. How do you know that, Captain?
  - A. I saw some of them.
  - Q. You saw some of them? A. Yes, sir.
- Q. Do you know whether they were all butted in that way?
- A. No, I do not because some of the vessels are partly butted and others are lapped.
- Q. Did you see those simply accidentally while you were looking at the stowage?
- A. I could not see the outside butts because they would be under water—not many of them; there would only be some at the light line.
- Q. You did not see any of the outside butts on the "Duc d'Aumale"?
- A. I could not see any that were below the light water line because the vessel was not docked.

- Q. How many did you see on the inside?
- A. I do not remember.
- Q. Did you see any on the inside?
- A. I saw some straps.
- Q. You say some straps? A. Yes, sir.
- Q. In what portion of the ship were those?
- A. I could not tell you now exactly; around the bilges, according to my impression.
  - Q. You did not examine them, did you, Captain?
  - A. No.
- Q. You did not look at them with any particular object or with any particular care, did you?
- A. I could not see them at that time. The only way to make [308] the examination would be on the dock.
- Q. You just happened casually to some of those, did you, and not accurately?
  - A. In a general way I looked at them.
- Q. When the repair that Mr. Campbell spoke about was made in Buenos Ayres, on one of those butts, you do not know what the damage to it was owing to, do you, Captain, what the cause of the damage to those butts or plates was? You don't know that, do you? A. I have an opinion.
  - Q. But you do not know, it, do you?
  - A. Not from my own observation.
- Q. Could not that be caused by a great many different causes?
  - A. It could be caused by two or three causes.
- Q. Could it be caused by the vessel going on the strand and these plates and butts being bent and in-

jured thereby? Could that be one of the causes?

A. It could be, with the vessel hung up on both ends and if it was not supported while over.

Further Redirect Examination.

Mr. CAMPBELL.—Q. Now, Captain, since Mr. Hengstler has seen fit to go into that question, what else could it be caused by?

A. You mean the reasons for the open butts?

A. Well, it would be my opinion, in the first place—

Mr. HENGSTLER.—Q. Captain, he did not ask you that; he said what else could it be caused by besides the cause you have stated.

A. It could be caused by improper distribution of weight in the vessel.

Mr. CAMPBELL.—Q. What would follow from the improper distribution of the weight?

A. Of course, when the vessel would be at sea—

Mr. HENGSTLER.—He said that that damage would follow; he [309] has testified to that.

Mr. CAMPBELL.—Mr. Hengstler, you are not testifying; the witness is testifying and you are not.

Q. What would follow from the improper distribution of weight?

A. Well, you see the vessel would labor and roll heavily.

Q. What effect would that have on the structure?

A. That would strain the structure.

Further Recross-examination.

Mr. HENGSTLER.—Q. Captain, could not that damage be due also to the fact that the vessel met

(Testimony of Albert F. Pillsbury.) very high waves? A. It could be, ves.

- Q. Or if she meets very long waves that would have the same effect, would it not, Captain?
  - A. Not very long ones; no.
- Q. Would not very long waves strain the vessel, no matter how she is loaded?
- A. It is not so likely as by very high and very short ones.
- Q. But it is true that long waves would have the same effect to a lesser degree, would they not?
  - A. Yes, I think quite a lesser degree.

Mr. CAMPBELL.—Q. Do you know whether the "Duc d'Aumale" was of the same general type, except her rigging, as the British ship "Chateau Briand"?

A. Well, the "Chateau Briand" has considerable more beam and not as fine lines perhaps. [310]

# Testimony of David W. Dickie, for Libelants.

DAVID W. DICKIE, called for the libelants, sworn.

- Mr. CAMPBELL.—Q. What is your business, Mr. Dickie?
  - A. I am a Naval Architect and Engineer.
- Q. Will you kindly state what experience you have had as a Naval Engineer and Architect and what training you have had?
- A. I served four years in the joiner-shop, boatshop, carpenter-shop and steel shipbuilding-shops at the Union Iron Works; two years and some odd months in the drawing-room following that.

Studied Naval Architecture under my father at night.

Q. Who is your father?

A. James Dickie, manager of the shipyard of the Union Iron Works. Passed the examination for a Government draughtsman and was employed in the Government service for one year, in the Naval Constructor's office at the Union Iron Works. the examination for Chief Draughtsman, and was assigned to the Naval Constructor's office at Seattle in charge of the United States Battleship "Nebraska." After that I was two years in Scotland at the Glasgow University. In the meantime, in the vacations, working at the Clyde Bank Shipbuilding Company on the Atlantic liners "Coronia," and "Carmania," and just at that time they were beginning the plans of the "Lusitania" in the drawingroom. Visited, under the auspices of the Glasgow University Engineering Society, the various shipyards throughout Great Britain and Germany, and on a trip through Europe visited French and Italian shipyards. Returning to America I worked in the Newport News Shipbuilding and Drydock Company's establishment, in their drawing-room and in the estimating department; and again at the Fore River Shipbuilding Company at Quincy, Massachusetts; Assistant Engineer of works at the National Cash Regist. [311] Came west and joined my father again in business in 1906, and joined my brother in 1907, the three of us being in the office together now.

- Q. In what business?
- A. Engineering and naval architecture. A member of the Society of Naval Architects and Marine Engineers; a member of the Engineers Shipbuilders of Scotland; a member of the Pacific Northwest Society of Engineers; a life member of the Glasgow University Engineering Society.
- Q. Are you in a position, Mr. Dickie, to tell us the nature of the strain which would be produced upon the hull of the British bark "Duc d'Aumale" where she was loaded with 2,660 tons of coke and pig iron, of which 1,900 tons were in the lower hold and 760 tons in the between-decks; and of the 1,900 tons in the lower hold 600 tons were pig iron, and of the 760 tons in the between-decks, 60 tons were pig iron. The 600 tons of pig iron in the lower hold were stowed in one body athwartship the vessel, immediately abaft of the square of the main hatch, for a distance of 63 feet, and at its forward end it is 36 feet in width and at its after end it was 23 feet in width. Can you tell us the character and the nature of the strain which would be produced upon the hull of that vessel by stowage of that cargo in that manner?
- A. I have made some calculations which will enable me to explain the stresses on the ship due to such loading.
  - Q. My question is, can you do it? A. Yes.
- Q. We would like to have your explanation as to the character of the strain which would be produced from those circumstances on the hull of the vessel?
  - A. I have made some notes here, if I can refer to

them, and I would like to have the blackboard and a piece of chalk. [312] With the permission of the Court and of counsel I would like to eliminate all the calculations and figures and just give the illustrations. In investigating this problem I tried different calculations to find the reason for the damage showing at the places it did. It is a known fact that excessive stiffness—

Q. (Intg.) Mr. Dickie, I am not asking you for that. I am not asking you to go into the question of the damage to this vessel. I am asking you if you can show us the character of the strain that was produced on the hull of that vessel by the loading. I do not want to ask you about the damage. That will be taken care of in another way.

A. It is a known fact that excessive stiffness of a ship will, by means of the strain resulting from the couple formed by the rigging pulling down and the mast resisting in an upward direction, produce a stress on a ship's bottom that will cause the vessel to develop trouble in the form of leaky butts and loose riveting in the wake of the masts. The ordinary ship—

Q. Mr. Dickie, I do not want you to go into the question of damage to the vessel. You are going into the question of the damage to the vessel. I want to limit your examination as much as possible.

A. Do you want to know how I arrived at this result?

Q. I want to know, if you can tell us, the character of the strain, if there was any strain, that was pro-

duced upon the bottom of this vessel by the stowage of this cargo in that manner.

A. Oh, I misunderstood you. The character of the strain, as illustrated by this curve, was in the nature of a sheering force; for example, on page 43 of Walton's book on "Know Your Own Ship," he illustrates— [313]

Mr. HENGSTLER.—I submit that the witness is not testifying here as to the character of the strain.

Mr. CAMPBELL.—Well, just wait until he finishes his answer, Mr. Hengstler, and if it is improper I will consent to having it stricken out.

A. (Continuing.) On page 41 of Walton's "Know Your Own Ship" he illustrates the strains on a vessel floating light. He shows there—

Mr. CAMPBELL.—Wait until I show that book to his Honor.

A. (Continuing.) He illustrates the strains on a ship floating light. If you put a heavy weight in one part of the ship and the weight exceeds the buoyancy of the ship at that point, that produces a sheering force at the end of the weight. If you have a part of the ship where the buoyancy exceeds the weight, that buoyancy tends to lift that part of the ship and produces an equal and opposite sheering force at the same point. These two sheering forces are equal. This sheering force is represented by this curve which I have drawn here.

Mr. HENGSTLER.—Q. Which sheering force—you spoke of two?

A. Both sheering forces; they are equal and op-

posite. They are represented by this curve. Now, the way that this is arrived at, I take a straight line and put upon it the weight first of the ship, which is represented by this line here (showing).

Mr. CAMPBELL.—Q. What is that line marked as? Mark it with some identifying mark.

- A. That is the weight of the ship.
- Q. Mark the line so that the record will show it; mark the line A B.
- A. I will mark it "Weight of Ship"; that is the weight of the [314] ship. Now, on top of that I superimpose the weight of the coke, which is 1,990 tons; that is represented by this line. I will mark that "Weight of Coke." On top of that again, I superimpose the weight of the pig iron, 600 tons, which is represented by this line. I will mark that, "Weight of Pig Iron." The other 60 tons of pig iron I stowed here as indicated on the stowage plan. So that this area in this figure represents the weight of the pig iron. Then as a matter of convenience only I stowed the weight of the masts up in their proper place as they come on the ship.
- Q. Those are indicated by the three perpendicular shaded sections?
- A. Yes, up here. Obviously this curve now represents the total weight of the ship.
  - Q. Which curve?

A. This total curve beginning here and running up over the masts, because I have stowed in there the total weight of everything that is aboard the ship.

- Q. That is the outside boundary line of the drawing?
- A. Yes. Now, I superimpose on top of the curve the supporting forces which are represented by Mr. Walton in his book, the supporting forces of the ship, or the buoyancy of the ship, the thing that carries it; that is formed by this line.
  - Q. Mark that buoyancy line?
- A. Yes, buoyancy line. You can see now by looking in here that the buoyancy exceeds the weight and that up here the weight exceeds the buoyancy.
- Q. That is to say, on the righthand side of your drawing the space between the line marked "Weight of Coke" and the buoyancy line represents in area the amount of excess buoyancy there was in the fore part of the ship of the type of the "Duc d'Aumale"?
- A. Yes, and the after end represents where the weight exceeded the buoyancy. [315]
  - Q. Between what lines is that section shown?
- A. Between the weight of the pig iron and the mastline and the buoyancy line. Now, in order to clear my diagram and produce the other curve I have brought all these weights down. This thickly shaded part represents the difference between the weight and the buoyancy.
  - Q. Mark this section you are speaking of now.
- A. The part above the line represents excess of buoyancy; the part below the line represents excess of weight. Now, here we have an excess of buoyancy; and here at the end of the ship we have an excess of weight. The stores are at this end, and the

anchors and the chains and all that sort of thing are at this end. From that we integrate that curve. It is done with an Amsler's Integrator and we get the sheering force curve. I have described the sheering force curve in my notes here. A sheering force is a force that is aroused by one part of the ship wishing to slide past another part, due to an excess of buoyancy or to an excess of weight. peaks of the curves—that is, the top and the bottom part—show the places of extreme sheering force, their location above or below the base-line being merely for mathematical reasons and they all could be put above; this peak could be put here just as well as not, if it were so desired. Note that every place where the sheering force curve reaches away from the base-line is described in the reports of the surveyors as the place where trouble occurred.

Mr. CAMPBELL.—Well, your Honor, that part we will ask to have stricken out because I do not wish the witness to go into the question of damages at all.

Q. From your calculations, Mr. Dickie, what conclusion have [316] you arrived at, if any, as to the straining effect, if any, of this stowage of cargo upon the hull of this vessel?

A. This stowage of the cargo on the hull of the vessel, that is to say, stowing the 600 tons of pig iron aft, with the comparatively light cargo of coke forward, produced an excessive strain on the vessel in the region of the mizzen mast and in the region of the main mast, with a slight excessive strain in the

(Testimony of David W. Dickie.) region of the fore mast.

Q. According to what method have you calculated these strains?

A. These have been calculated assuming that the ship was floating in still water, and all the strains due to the ship being at sea have to be added to this. There is an additional strain of from 34 to 65 tons for each mast that has to be added to these forces on account of the resultant pressure of the masts on the keel, due to the pulling strain of the rigging while the ship is at sea.

Q. That would be present in any ship, would it not?

A. Yes, that would be present in any ship, and that is taken care of in the design.

Mr. CAMPBELL.—We will disregard that, your Honor, and that portion of it we will ask to have stricken out.

Mr. HENGSTLER.—Q. That strain would not be exercised upon the same places, upon the same parts of the ship, as the strain from the stowage acts?

A. No, but it so happens in this case.

Q. In other words, it could not be added on to the strain in this case?

A. You would have to add it on where it properly belonged. It so happened that the stowage in this case accentuated the strain which came at the masts. That was merely a coincidence however. [317]

Mr. CAMPBELL.—Q. Why was that?

A. Because this end of this stowage came just forward of the main mast and the end of this stow-

(Testimony of David W. Dickie.) age came just forward of the mizzen mast.

- Q. What represents upon your drawing the sheering force?
- A. This dark pencil line represents the sheering force.
- Q. And it runs up and down the horizontal line of the center?
  - A. Yes, this horizontal line is the base line.
- Q. From your calculations, where did you find the greatest sheering forces to exist?
- A. The greatest sheering forces existed in two places: one just at the end of the pig iron, or just at the after end of the main hatch, between the after end of the main hatch and the main mast; the other one was just forward of the mizzen mast.
- Q. Where were those two points with respect to the ends of the pile of 600 tons of pig iron?
  - A. Right at the end of the pile.
- Q. Is this calculation of yours made in accordance with any scientific principles of ship designing?
- A. Yes, it involves the very principle on which we design ships.
- Q. In designing ships are you able to calculate the weight of the cargo which they will carry for distribution of those weights? A. Yes.
- Q. In the designing of ships is such calculation necessary in order that you may know what strength of materials to put into particular parts of a vessel and to know what mould to give the vessel so as to give her water line and her load line properly?
  - A. Yes, sir. [318]

- Q. If this pig iron had been distributed more over the bottom of this vessel, what effect would that have had upon the sheering force?
- A. If this pig iron had been distributed so that there was a pile put between these two masts and a pile between those two masts and—
- Q. (Intg.) Just state what you mean when you say "between these two masts."
- A. If this pig iron was distributed so that there was a pile put between the fore mast and the main mast, and another pile put between the main mast and the mizzen mast the effect would be to reduce the height of the sheering force curve and bring it down in this form, so that it would very materially lessen the strain on the ship, or very materially lessen the sheering force on the ship and the strains attendant thereto.
- Q. State whether or not, in your judgment, as a naval architect, the sheering force which you found to exist by the distribution of this cargo in the "Duc d'Aumale" was an unusually destructive one upon the hull of the vessel.
- A. Yes; it appealed to me as being careless loading.
- Mr. CAMPBELL.—I do not think I will go into the technical part of this any more, Mr. Hengstler, unless you want to. My idea, if the Court please, was simply to get before us a scientific idea of the nature of the strain that would be produced by that loading.

The COURT.—We can get some idea of the scientific end of it by the explanation made by Captain Curtis; he said that if you float a lath on water and put the weight on the ends the center would naturally sink down.

Mr. CAMPBELL.—Yes, in his nautical way he described it as Mr. Dickie has, in a scientific way. I do not care to have [319] him go into the quantity of the forces, and the like of that. I think that is all.

Mr. HENGSTLER.—I will admit, your Honor, that there are a great many features of this that I am unable to understand, the so-called scientific part of it.

## Cross-examination.

Mr. HENGSTLER.—Q. Mr. Dickie, there are a good many data to be considered, are there not, in making this curve of stress that you have made in this case?

A. Yes, sir.

- Q. A great many features?
- A. Yes—well, not a great many; I have them noted in my report here.
  - Q. Among those features is the weight of the ship?
  - A. Yes, sir.
  - Q. What was the weight of this ship?
- A. The weight of this ship was about 1,285 tons, without the masts, and the masts' weight, about 155 tons.
  - Q. Where did you get these data?
- A. I took that from ships of the "Duc d'Aumale" type. I took that from informaion upon which

(Testimony of David W. Dickie.) ships of the "Duc d'Aumale" type are designed.

- Q. Different ships of that same type have different weights, have they not?
  - A. No, they weigh about the same.
  - Q. You say they weigh about the same?
  - A. Yes.
- Q. But you do not mean to say they weigh the same, do you? A. Within 2 or 3 per cent, yes.
  - Q. How do you know that?
  - A. Because they all float about the same depth.
- Q. How do you know that? Are you familiar with that type of French ships?
- A. Yes. That type of French ship is taken from the British designs; in fact, most of these French ships, the [320] drawings have been traced right directly from the British designs that have been taken over there by these young men who went over there to build ships for the French bounties.
- Q. You have read about that, have you, Mr. Dickie?
- A. No, I know some of the men who went over there.
- Q. Do you mean to say that you actually know that the "Duc d'Aumale" has been actually built upon the designs of British ships?
- A. I could not make that positive statement that the "Duc d'Aumale" was, but the "Duc d'Aumale" was built by men who went over with British designs. She was built at the same time that other ships were built from British designs. In fact, I know it to be a fact that the "Chateaux Briand" was taken di-

rectly from a British design because the plans-

- Q. (Intg.) I do not care about the "Chateaux Briand"; the "Chateaux Briand" is not in suit here; I am speaking of the "Duc d'Aumale"?
  - A. I did not see the plans of the "Duc d'Aumale."
- Q. You did not see the plans of the "Duc d'Aumale"? A. No.
- Q. The only thing that you know about the weight of the "Duc d'Aumale" is that you know the weight of other French ships of the same type?
  - A. Of the same type, yes, sir.
  - Q. What is the length of the "Duc d'Aumale"?
- A. She is 277.7 feet on the main deck and about 266.2 feet on what we call between perpendiculars.
  - Q. Who told you that?
- A. I took that from Lloyds. Lloyds Register of British and Foreign Shipping.
- Q. And from the same place you took the depth of the "Duc d'Aumale"? A. Yes, sir.
  - Q. And her breadth? A. Yes. [321]
  - Q. Do you remember what her breadth is?
  - A. Yes, 40.3 feet. Her depth of hold is 22.5.

Mr. CAMPBELL.—Q. Just explain to us what the Lloyd's Register of British and Foreign Shipping is?

A. Lloyd's Register of British and Foreign Shipping is a register published by the scientific end of Lloyd's, in London, and gives the length, breadth and depth and the general particulars of all the ships in existence in the world.

Mr. HENGSTLER.-Q. If you should hear that

the testimony in this case was that the breadth of the "Duc d'Aumale" is not 40 feet but is 45 feet, you would modify your curve of stress, would you not?

- A. I think I would doubt the testimony.
- Q. And you would doubt the testimony?
- A. Yes, sir.
- Q. You think the testimony is wrong?
- A. I would think the man was mistaken.

Mr. CAMPBELL.—Q. What reliance is placed by the shipping world upon Lloyd's Register?

A. All the reliance possible to a book of that kind. Lloyd's Register stands very high among the shipping people. If there is any doubt about the dimensions in Lloyd's as compared with the statement of any witness, I should doubt the witness. In my whole life I have only discovered one mistake in the book.

Mr. HENGSTLER.—Q. You have discovered a mistake?

- A. Only one, but there are thousands—
- Q. (Intg.) If the captain of the ship said that, would you still prefer Lloyd's statement as to what the dimensions of the vessel were?
- A. If the captain had measured it, and after he measured it and took the dimensions with a rule, then I would investigate for myself to see if he was right. But if he had [322] not actually measured it I would doubt his statement very much as compared with Lloyd's Register.
- Q. If the dimensions generally of the "Duc d'Aumale" are different from the dimensions as you

got them from information from Lloyd's Register, or any other source, if they are different, that would change your curve of stress, would it not?

- A. That would only change it in type; it would not change it very much. The character of the curve would remain exactly the same. It would merely change the quantities a little bit.
- Q. It would change the quantities; it would change those extreme points?
- A. Yes. You see this represents quite a large quantity, so you would have to make quite a big change in the quantity before it would show on this curve.
- Q. Supposing the testimony showed that that pile of pig iron which was in the lower hold of the vessel was wider than the dimensions upon which you based your curve, that would also change the curve?
- A. That would not change the curve, only the length of it.
- Mr. CAMPBELL.—Of course, we object to that, if your Honor please, as an improper hypothesis as the dimensions were given by the master of the ship himself in his testimony.
- Mr. HENGSTLER.—The dimensions which you stated?
- Mr. CAMPBELL.—The dimensions of 36 feet at one end and 23 feet at the other.
- Mr. HENGSTLER.—I think the testimony of Captain Rio shows, as I remember it—it is true I have not read it recently—that the pile is wider than the dimensions which you stated, and it shows that

(Testimony of David W. Dickie.) that pile covered an area of 2,700 square feet. That is my recollection.

- Q. What is the area of the pile upon which you based your curve? [323]
- A. The area does not enter into my calculations at all, merely the length of it.
  - Q. You do not consider the breadth of the pile?
  - A. No; only the weight of it and the length of it.
  - Q. Nor the height of it either?
  - A. The height of it is covered by the weight.
  - Q. And the length of it and the weight of it?
- A. Those are the only two things that affect this calculation whatsoever.
- Q. If the pile were moved further to the wings than it was in this case, and it had the same length and the same weight, it would produce the same curve, would it?
  - A. It would produce the same curve, yes.
- Q. If the pile is exactly in the center line of the vessel that produced this curve? A. Yes.
- Q. And if you moved that pile into one wind, it will produce the same curve? A. Oh, no.
  - Q. You just said so.
- A. But you did not say that before. If you move the pile into one wing that lists your ship and that changes my curve.
  - Q. That changes your curve? A. Yes.
- Q. Did you not say a little while ago that it did not make any difference whether your pile was in the center line of the vessel or whether it was moved nearer to the wings?

- A. That is a different class again.
- Q. I do not mean entirely into the wings, but moved near to the wings?
- A. That does not make any difference provided you keep the vessel upright.
- Q. Provided you keep the vessel upright it would produce the same curve?
  - A. It would produce the same curve. [324]
- Q. In other words, you would say the stress on the hull of that vessel would be exactly the same whether you put the pile exactly along the center line or whether you moved it to the starboard side or to the port side, it produces the same stress upon the vessel?
- A. No, if you put the pile in the center of the ship it produces the same sheering stress on the ship as if you put one-half of it on each side in the wings; if you put one-half of it on each side in the wings and leave a wide pathway down through the center between the two piles, that produces another stress on the ship which has not been taken into this calculation at all and which we are not interested in.
- Q. I did not, however, speak of such a condition of affairs at all; I spoke of the case where you moved your pile bodily more toward the starboard or bodily more toward the port side of the ship, not where you divided it into two piles?
- A. If you moved the pile bodily toward the port then you list your ship to port and that produces a different basic curve, to begin with, because your buoyancy curve then is of different shape.
  - Q. What you attempt to illustrate here is—

- A. (Intg.) The ship floating in smooth water.
- Q. It is the longitudinal stress, is it not?
- A. Yes.
- Q. Not the latitudinal?
- A. No, not at all; that is a different calculation.
- Q. That would be an entirely different calculation?
- A. Yes.
- Q. All that you are attempting to do is to give a picture of the longitudinal stress?
  - A. Of the longitudinal sheering force.
- Q. Would not that be exactly the same if you moved the pile [325] toward the port or toward the starboard, without producing a list?
  - A. Without producing a list, yes.
  - Q. It would be exactly the same curve?
- A. The longitudinal sheering stress would be the same.
- Q. And therefore your curve of stress would be the same? A. Yes.
- Q. Supposing that the "Duc d'Aumale" under the data you have here, had been loaded with coke alone, and without having any pig iron at all, how would that effect the curve of stress?
- A. That sheering stress would probably disappear altogether except right at the masts there would be a little point that would stick up like that; the rest of it would automatically disappear.
- Q. Your curve also depends upon the different weights as they are distributed throughout the vessel, for instance, the weight of stores, does it not?
  - A. Yes; this curve takes that in; you will notice

there is a lump there in the curve; the upper part there is stores; likewise there is a lump at the forward end, the result of the weight of anchors and chains.

- Q. How did you arrive at the weight of the stores?
- A. I just took the ship complete at light draught, which gives the weight of stores and everything, crew and effects.
- Q. But you are guessing there, are you not, at the weight of the stores? A. Oh, no.
  - Q. It might be twice that weight?
  - A. I am taking the normal amount of stores.
- Q. You do not know whether she carried the normal amount of stores or not, do you?
  - A. I don't know that, no.
  - Q. What is the normal amount of stores?
- A. In ships of that type it runs about 15 tons. [326]
  - Q. 15 tons?
- A. It is a very small amount compared with the total displacement of the ship upon which we are working. The total displacement of the ship in this case is 4,090 tons; 15 tons will not affect this calculation whatsoever; it affects it but it does not affect it so that it shows.
- Q. The stress exercised upon the bottom of this ship as it is represented in your curve also assumes the uniform strength of the bottom of the ship, does it not?
- A. No; the stress that is represented here is independent entirely of the strength of the ship in any way, shape or form. This represents the stress on

the ship. Now, I wanted to bring out the point of whether the ship was good enough, but the counsel, Mr. Campbell, said he did not want to enter into that. The remark that I made on that was ruled out.

Mr. CAMPBELL.—I have no objection to Mr. Henstler going into it if he wants to; I did not want to broaden the examination any more than was necessary.

Mr. HENGSTLER.—I certainly do not want to, either.

- Q. Does it depend on the lines of the ship, if the ship tapers toward the extremities?
- A. Yes, that comes in the curve. You see my buoyancy curve is very small at the end. You see I have here—
- Q. (Int.) I am satisfied with your answers; I do not care for any further explanation on that point. Now, Mr. Dickie, do you think you would be as capable of figuring out theoretically the stress upon the hull of this ship under an assumed stowage, would you be as capable as the builders of the ship themselves would be?
- A. Why, yes, because I worked for some of the big builders of the United States and Scotland doing that very thing. [327]
- Q. Is it not a fact that the builders are frequently surprised after building a vessel at the way in which she acts with different kinds of stowage?
- A. They are only surprised where they have neglected to make the calculations.
  - Q. Only where they have neglected to make the

(Testimony of David W. Dickie.) calculations? A. Yes, sir.

- Q. If they are careful builders and make their calculations carefully you think they are never surprised?
  - A. No, they should know right away.
- Q. The ship always acts in the way she is expected to by the theorists, by the builder, by the naval architect? A. Yes.
- Q. Now, don't you know that that is not so? Have you not read frequently that the best builders in the world are greatly surprised at the way in which ships act when you put them out in the ocean?
- A. Yes, but that is because they have neglected to figure them and because the builder is depending very often on a chief draughtsman, or upon a scientific man to do his work, and the chief draughtsman, by reason of press of work or for other things, other reasons, very often neglects things and takes the chance that it will be all right and then the surprise is evinced afterwards, after he takes the chance. But there is no surprise about the stowing of the ship because that can all be determined after the ship is finished.
- Q. Is it not true that your theory frequently breaks down when such innumerable forces as come into play on the ocean act upon the ship?
- A. Those innumerable forces have been taken care of by years and years of experience and recorded results by Lloyds, which I [328] have mentioned before. They have issued a book of rules on the construction of ships, which takes care of these things.

Q. And that is based not upon theoretical calculations but upon experience; it is empirical rather than theoretical?

A. No. The old original rules were based on purely the rule of some and the practice of certain shipbuilders, but that was found by experience to be too expensive a method on the insurance companies; now, they have probably one of the most highly technical staffs in the world at Lloyd's, and everything is dealt with technically, and then is backed up by practical experience.

Q. The one who has had practical experience with the ship is better qualified, is he not, to tell for instance how she should be stowed than one who has never stowed her before?

A. No; a man who has had practical experience with the ship would know her various idiosyncracies, but there is no reason in the world why you cannot take the plans of a ship and put the stowage on her properly as it belongs.

Q. You can do that safely as a theorist?

A. Yes.

Q. You can tell how the vessel should be stowed, without having had any previous experience with her?

A. Without having had any previous experience with the vessel whatsoever.

Q. Do you know to what extent the French builders changes those British designs which you say were introduced into France for the purpose of building vessels to suit their purposes?

A. They made changes but they were largely in the equipment. The French people make very compasses and very fine instruments of that kind and they put a great deal of finishing work, which the British people do not do; but in the actual [329] structure of the ship they made no material changes.

Q. You know that one of the great policies in French ship trade and French navigation is the bounty policy? A. Yes.

Q. To fit the ships to the bounty laws? A. Yes.

Q. Do you know what changes were made in these French ships for the purpose of adapting them to the bounty laws?

A. No, I am not familiar with the French bounty law. I know there is such a law. I have been informed, but it is merely hearsay, that the law was made to suit the ships which were in existence at the time; that is to say, suit the experience of ships.

Q. You do not know that the structure of the ships was materially altered after the bounty law came into existence for the purpose of adapting the ships to the bounty law?

A. The structure of every one of those French ships that I have examined has been the same as British ships of the same type.

Q. How many of them have you examined?

A. Oh, 5 or 6 of them that have come in here in trouble.

Q. Here in San Francisco? A. Yes.

Q. What cargo did they bring here?

- A. The "Chateau Briand" brought coke and pig iron.
  - Q. Just like the "Duc d'Aumale"?
- A. It was stowed differently than in the "Duc d'Aumale."
  - Q. Was it stowed substantially in the same way?
- A. No, the pig iron was distributed over a larger area of the ship, over a larger length of the ship.
- Q. What was the length of the pig iron in the "Chateau Briand"?
  - A. I do not remember the exact details. [330]
  - Q. What was the length in the "Duc d'Aumale"?
- A. In the "Duc d'Aumale," I do not remember that either, but I have that figure here.
  - Q. 63 feet, was it not?
- A. Yes, I believe that is the figure; I wanted to verify that. I took that from the reports.
- Q. That was a very considerable length, was it not, that the pig iron in this case covered?
  - A. In my opinion it was not long enough.
- Q. If this book of Walton's that you mentioned awhile ago and cited as an authority, if that book states that it is impossible to design a ship to behave always in the same manner among waves—on page 160 of that book, do you doubt that statement?
  - A. No.
  - Q. That is correct, is it?
- A. That statement is not complete. A ship will behave in the same manner amongst waves if she is properly loaded, if the waves are the same in every case.

- Q. It depends, of course, upon the waves, does it not?
- A. Yes, as much as upon the ship. That is the trouble with that book, the statements are not always concluded.
- Q. Otherwise the statement is correct, that it is impossible to design any ship to behave always in the same manner in the waves; that statement is correct with the exception of your qualification?
  - A. As amended it is correct.
- Q. Mr. Dickie, has the metacenter of the vessel anything to do with the amount of stress exercised by the cargo upon the hull? A. Yes.
  - Q. Has it much to do with it?
  - A. It has a great deal to do with it.
  - Q. Has it not everything to do with it?
- A. No, it has not everything to do with it. I will state— [331]
- Q. (Intg.) Just answer the question. You say it has a great deal to do with it. Do you know what the metacenter is of the "Duc d'Aumale"?
- A. The metacentric height of the "Duc d'Aumale" when she left Brest was about 3 feet.
  - Q. How do you know that?
- A. I have figured it up from the designing formula and from the stowage which Mr. Campbell gave me.
- Q. Is it not a fact that for the purpose of determining the metacentric height one must actually experiment with the ship itself and must know the ship?
  - A. Not with a new ship. We tell the metacentric

height of a ship long before the keel is laid.

- Q. As a builder you determine the metacentric height before she takes any cargo on her?
  - A. Yes, sir.
- Q. Does the metacentric height when she has cargo, when she is stowed, correspond with your theoretical metacentric height?
- A. The metacentric height has to be changed to suit the cargo. You introduce the cargo into your calculations.
- Q. In other words, experience is necessary for the purpose of determining the metacentric height?
- A. No, it is entirely independent; suppose you stow the ship in a certain way—
- Mr. CAMPBELL.—Just one moment. I do not know whether the Court understands what is meant by the metacentric height, or not?

The COURT.—I do not, but I thought I would find out before we got through with the examination.

Mr. HENGSTLER.—Q. Explain what is meant by metacentric height?

A. Let me explain those two points; we have one [332] point called the center of gravity which is a point upon which if you hang the ship you could turn her in any position whatsoever and she would remain in that position. That is the center of the weight of the ship. Just like this pencil; you balance it on your finger, the center of gravity of that pencil is above your finger, right in the center of the pencil. The metacenter is the point upon which a ship swings like a pendulum, and the point of meta-

center changes with the amount that the ship is immersed in the water, and with the design. The center of gravity for the ship without any cargo is in one position and when you add the cargo you move the center of gravity of the ship to suit the new position of the total mass; the distance between the center of gravity and the metacenter is what is called the metacentric heart. In our calculations we have abbreviated it to G. M.

Mr. HENGSTLER.—Q. The proper metacentric height for the purpose of loading a particular cargo in the vessel can only be determined, can it not, by experience? A. No.

Q. You think it can be determined theoretically?

A. You load your ship and figure your metacentric height, and if your metacentric height is not correct then you move the loading of the ship. Suppose after loading this ship with 600 tons of pig iron on the bottom you found that the ship had too much metacentric height, you would proceed and move on your drawing part of those 600 tons from the bottom up to the between-decks and then you would find your new center of gravity and find out if the new metacentric height which you had found was correct.

Q. In other words it is an empirical problem, is it not?

A. The metacentric height has been found by experience to vary [333] for sailing ships of this type with a *long of* stability 2 feet 6 an with a short range of stability 3 feet 6; so you can go anywhere between 2 feet 6 and 3 feet 6 with perfect safety.

- Q. Now, Mr. Dickie, I show you a drawing here of the "Duc d'Aumale" and of curves, which you probably recognize; can you read French?
  - A. Very slowly.
  - Q. What do you consider these curves to indicate?
  - A. These look to me like curves of stability.
  - Q. Not curves of stress?
- A. That looks to me like the same curve that I have here; yes, I guess that is what it is.
  - Q. Yes, that is what it is.
- A. It says here "Maximum, 1675 tons." Yes, that is the same curve that I have here, the sheering stress.
- Q. It is the same curve you have there. If I tell you that these curves are made by the builders of the ship, you are gratified to find that they agree with you?
- A. I don't know whether they do agree with me. I do not know whether the quantities agree with mine.
- Q. Roughly speaking, that curve is based here upon the supposition that the vessel weighs so much, 1,396 tons, that the pig iron weight 660 tons, and that the coke weighs 2,035 tons, which is the same as yours?
  - A. That is remarkably close.
- Q. And that the cargo is distributed in the way in which it was actually loaded at Rotterdam, just the same data that you have there; and you have produced practically the same curve of stress.
- A. Yes, it looks to be exactly the same. I cannot read these French marks to tell what the quantities

are. The bending moment is different from any sheering force curve. The bending moment is like my sheering force curve, it is the same principle carried one step further. [334]

Q. You have noticed that the second curve, in the second case, it is assumed that the weight of the ship is the same as before and that she carries nothing but coke; then that curve is produced by the builders and they find that in that case that is the second curve.

Mr. CAMPBELL.—Mr. Hengstler, won't you mark this? I think we will ask to have that offered in evidence. It will undoubtedly save the taking of that deposition abroad of which you have spoken. I did not understand you had that diagram.

Mr. HENGSTLER.—It is marked the second case. The second case is the case where there is nothing but coke carried in the vessel, no pig iron. The curve is the curve which is marked here "Second case." Then there is a third case treated here, assuming that the weight of the ship is the same as before and assuming that the cargo is distributed evenly, that the pig iron is distributed evenly. Do you notice here the weight of the coke is the same as before; the weight of the pig iron is distributed, 200 tons in the forward part of the vessel, being moved further forward, 350 tons being left where the cargo was originally stored—no, I have that wrong; the 200 tons being moved back further to the rear, the 350 tons being left where the cargo was originally stowed and 50 tons being carried forward; the curve

(Testimony of David W. Dickie.) corresponding to that curve—I think that is substantially the Buenos Ayres loading.

Mr. CAMPBELL.—In the Buenos Ayres loading there were 110 tons carried forward, 50 tons on the port side and 60 tons on the starboard side.

Mr. HENGSTLER.—That may be so. I do not remember the figures of the Buenos Ayres stowage. These figures may not be the exact figures; I do not know whether they are, or not; but [335] nevertheless this is a case where some of the cargo was taken forward and some taken backwards. The curve corresponding to that is marked here the "Third Case."

Mr. CAMPBELL.—Suppose that you put your diagram on the blackboard so that the Court can see it.

Mr. HENGSTLER.—Q. The principle upon which the two are constructed are the same, Mr. Dickie, are they not? A. Yes.

Q. The curve corresponding to the second assumption, namely, that there is only coke carried, is the second case here; the curve corresponding to the third assumption is marked the third case here. What does that indicate with reference to the strain upon the hull of the vessel as far as the opinion of these people is concerned in the second case.

A. Was that calculation made for smooth water? What does it show?

Q. It does not show anything about that, but how could it be made except in smooth weather?

A. It can be made in three ways. It can be made

by putting the ship on the crest of the wave, in which case she would get one bending moment; in another case putting the ship in the hollow of the wave, and also putting the ship in absolutely smooth water, in which case you would get another case.

- Q. Well, what would be the effect with reference to the strain?
  - A. The bending moments would not be that shape.
- Q. In what way could they be influenced or modified.
- A. If you put this on the crest of the wave, this curve would come down here and would go out at the end. I refer to these two particularly. These two are pretty complicated.
- Q. I wish you would tell the Court what the general effect [336] with reference to the strain.
  - A. The bending moments would not be that shape.
- Q. In what way could they be influenced or modified?
- A. If you put this on the crest of the wave this curve would come down here and would go out at the end. I refer to these two particularly. These two are pretty complicated.
- Q. I wish you would tell the Court what the general effect on the stress would be if you put your ship outside of those curves?
- A. This curve deals with a different strain from the strain I am dealing with here. This curve deals with the bending of the ship as a whole. It gives me the strain on the upper part of the girder and on the lower part of the girder. That very likely has

been taken in the worst case, on the crest of the wave; I should imagine that by looking at it.

- Q. Would it be probable that anybody would assume this vessel to be on the crest of the wave for the purpose of determining the strain of the cargo upon the hull? What is the most likely case?
- A. That is the most likely condition because that is the worst condition.
- Q. So, under the worst condition, it would then appear that with the stowage as it was in Rotterdam the vessel would have less strain than if she had been loaded with coke alone or if the cargo of pig iron had been distributed in the hold?
- A. She would have less bending moment but not less sheering force. For example, if I integrate the sheering force curve, that will follow up and make a bending moment curve just the same as that. The bending moment in this ship does not enter into it at all; the ship has not shown any strain on the bending moment at all. [337]
- Q. You are always figuring on account of something which you have been told about it, are you not?

  A. No.
- Mr. CAMPBELL.—He has not been told anything about it; it has been taken from your depositions.
- A. (Continuing.) I made this thing with a clean sheet and with an open mind and an absolutely unbiased position. I have made this calculation, and the calculation has shown me that here is an excess of sheering force—not of bending moment.

Mr. HENGSTLER.—Q. But the bending moment under the circumstances would be less than if the cargo were distributed over the hold?

- A. Quite possible, but you have had no trouble from the bending moment.
  - Q. How do you know of that?
  - A. That is, I have not been told of any.
- Q. You are assuming that the damage was due to the sheering force and not to the bending moment?
  - A. Yes, sir.
  - Q. That is your assumption, is it not?
  - A. Yes, sir.
  - Q. But you do not know anything about it?
  - A. No.
- Q. If the sheer at the extremities of that pile is greater than anywhere else on the bottom, as you think it is, do you not? A. Yes.
- Q. And if the place where the sheer operates is stronger than other parts of the vessel, than the parts forward or the parts toward the stern, then you would say that the stowage was all right, would you not? A. No.
- Q. If the foundation is stronger than it would be if you moved it to weaker parts of the vessel?
- A. No, because your sheer for example, right in the middle of the load goes down to nothing. [338]
  - Q. How do you know that?
- A. Because the curve shows it. Wherever the curve crosses the base line there is no sheering force.
- Q. Your sheers are also determined here, or at least by your testimony, with reference to the masts,

are they not? A. Yes.

- Q. How do you know where the masts were in the ship ?
  - A. From the plans of a ship of that type.
- Q. Have you ever seen a plan of the "Duc d'Aumale"? A. No.
  - Q. You have never seen it?
- A. Well, you have it right there if you introduce that in evidence.
- Q. Did you follow the stowage plan that you spoke of? You saw the stowage plan, did you not?
  - A. Yes.
- Q. Did you follow that in determining the position of the masts?
- A. No. In the stowage plan the masts were put on—the stowage plan was a printed plan and the masts were put on just merely to illustrate.
  - Q. And you did not use that? A. No.
  - Q. You used the plan of a vessel of that type?
  - A. Yes, sir.
  - Q. What vessel was that?
- A. I think I used the "Chateaux Briand" for the location of the masts; if my memory serves me right I used the "Chateaux Briand" for the location of the masts.
  - Q. Are you sure about that?
  - A. No, I am not.
- Q. You do not know where the masts of the "Duc d'Aumale" are located?
- A. Not within a foot or so. But that did not change my calculation.

Q. It would not make any difference where those masts are located?

A. Not 6 inches or a foot. It would [339] alter my calculation but it would not make any material change in the result that would affect this testimony.

Q. With reference to the strain which is exercised upon the masts themselves?

A. Even with reference to the strain because I took that strain on the masts into account. If I moved that one foot forward, or one foot aft, that would not have changed my curve, that is, it would not have changed it so that the average layman could have noticed it.

Q. It would have changed to some extent?

A. To a little extent, yes, sir.

## Redirect Examination.

Mr. CAMPBELL.—Q. Mr. Dickie, in this drawing which counsel has produced here for the first time shows an accurate location of the mizzen mast of the "Duc d'Aumale" can you tell by measuring with a rule how close that is to the position that you placed the mast in your calculations?

Mr. HENGSTLER.—On the assumption that it shows it correctly with reference to the masts.

Mr. CAMPBELL.—I supose it does. You have produced the drawing here.

Mr. HENGSTLER.—Well, Mr. Campbell, you know perfectly well that the masts have no relation to the stowage plan, that they are placed anywhere,

that they are not drawn to a scale at all.

Mr. CAMPBELL.—Then you admit that your drawing in that respect is not accurate?

Mr. HENGSTLER.—So far as the positions of the masts are concerned I have no doubt at all that they do not enter into the calculation at all and that they are simply drawn in any way. That is always the case with stowage plans. [340]

Mr. CAMPBELL.—Is this a stowage plan?

Mr. HENGSTLER.—No, it is not a stowage plan.

Mr. CAMPBELL.—It is a plan made by the builders, is it not?

Mr. HENGSTLER.—It is a plan made by the builders. I will certainly not admit that the position of the masts are supposed to be drawn to scale because the masts do not enter into the calculation.

Mr. CAMPBELL.—Well, let us see how close they are to what you have drawn them. Of course, we do not want any guess work.

A. It seems to be about 2 or 3 feet on that plan different from on mine.

Q. How much would that alter your curve?

A. That would merely move the point over here about that much.

Q. That is the peak? A. Yes.

Q. The curve above the base line would move to the right?

A. Move to the right, yes.

Q. Would that indicate that the mizzen mast was further forward or further aft than you have it?

A. That would indicate that the mizzen mast was further forward.

- Q. What are the curves or the stresses which the builders have shown upon the chart produced by counsel?
- A. Those are the standing bending moment curves. I would say, not knowing anything to the contrary, that they have taken it in the worst case.
- Q. What is the difference between the bending moment and the sheering moment?
- A. The bending moment is the moment on the ship tending to bend her, bending the structure as a whole. The sheering moment on a ship is the sheering force tending to cut [341] the ship off, as illustrated by Walton in that figure which I described in my testimony; but the sheering force of the cargo, the greater part of it comes on the bottom of the ship and produces these stresses; whereas the bending moment comes on the ship as a whole.
- Q. Can the curves, then, which have been introduced by counsel be compared with the curves which you have made for the purpose of criticising your curves?
  - A. Only for the purpose of integrating my curves.
- Q. Well, suppose you integrated your curves, how do you think it would compare with the markings up and down across the base line?
  - A. I think it would be about the same.
- Q. Does the metacentric height which counsel went into affect the sheering stress of the stowage of the cargo, or does that enter into the capsizing moment?
- A. The metacentric height affects not the stowage of the cargo but adds to—for example, here is a ship

and here are the masts and the sails on it; here we have the rigging, the shroud; when the wind is blowing from this direction the vessel leans over like that and this shroud loosens up; now you have a strain here on this shroud to keep the mast from going overboard; you have a corresponding strain on the mast pushed down; to complete the couple the strain comes up through the side of the ship. This load that comes down through the mast is added to the load which I have here. That is independent of the cargo altogether.

- Q. So as to get them in the record, when your ship is keeled over, then you have an upward stress on the windward shrouds? A. Yes, sir.
  - Q. And a downward stress on the masts?
  - A. Yes, sir. [342]
- Q. And an upward stress on the windward plating of the ship? A. Yes, sir.
- Q. And you took that stress into your calculation in figuring the sheering stress?
  - A. I did not take it into this.
- Q. Because your curve is figured with the vessel in smooth water?

  A. In smooth water.
- Q. That was not exactly what I was getting at. In calculating the metacentric height of a vessel, is it for the purpose of determining the capsizing moment or for the purpose of determining a sheerage stress of the stowage of cargoes?
- A. The metacentric height is for the purpose of calculating the capsizing moment and is independent

of the sheering force except as I mentioned about the mast.

- Q. Does the metacentric height of a vessel enter into in any respect the condition of her stiffness and her stability? A. Yes.
  - Q. In what respect?

A. A tall metacenter, a great metacentric height indicates a very stiff ship; a low or a small metacentric height indicates what we call a tender ship; a negative metacentric height, where the metacenter is below the center of gravity, the ship will upset in smooth water.

Mr. HENGSTLER.—Q. Is it not just the opposite, Mr. Dickie, namely, that a small metacentric height indicates stiffness?

- A. A small metacentric height indicates a tender ship.
- Q. Then Walton is wrong again, is he not, if he says the opposite?
  - A. I do not believe he says so.
  - Q. But if he says that, he is wrong?
  - A. If he says that he is wrong.

Mr. CAMPBELL.—Q. You mean by stiffness the tendency of [343] a vessel to remain upright?

- A. Yes, sir.
- Q. And by tenderness you mean the tendency of a vessel to ease off? A. Yes.
- Q. Do you in this calculation of sheering force in any way take into consideration the metacentric height?
  - A. None except in this way; I made one answer in

which I gave an additional stress on the bottom due to stiffness of the ship. I took it into consideration in that particular answer but that is the only answer.

- Q. If the stores that you figured at 15 tons had weighed double that amount, namely, 30 tons, would that have made any great difference in your sheering stress curve?
- A. No. This curve is too small; when you take into account that I have represented 4,090 tons, you can imagine what a very small area of that curve will be represented by 15 tons.
- Q. If you had a cargo of all the same character of material, say for instance bulk coal or bulk coke or bulk barley, would you then have a sheering stress such as is shown there?
- A. No, the sheering stress would be different. The sheering stress in that case would be more of an even curve. It would swing over in that direction.
  - Q. What would the sheering stress then be due to?

A. Just the lack of buoyancy at the ends to support the ship, the bare ship itself, and the excess of buoyancy in the middle to make up the lack of buoyancy at the end.

Recross-examination.

Mr. HENGSTLER.—Q. The effect of a sheering stress is to produce a strain upon certain parts of the vessel?

- A. To produce a vibrating strain.
- Q. And the effect of a bending stress is to produce a strain— [344]
  - A. (Intg.) A pulling and a pushing strain.

- Q. Both of them produce strains?
- A. Both of them may produce strains, but of different types.
- Q. If the "Duc d'Aumale" is loaded first in the way in which she was loaded at Rotterdam, and afterwards in reloading her she was loaded in the way in which she was loaded at Buenos Ayres, the pig iron distributed more, by the change in the loading the sheering strain was lessened and the bending strain was heightened?
- A. That could be quite possible, yes; I will not answer that question definitely without I make the calculation myself.
  - Q. But that is quite possible?
  - A. It is within the bounds of possibility, yes.
- Q. That it might produce a greater bending strain and a lesser sheering strain? A. Yes.
- Q. You have the choice as between stress in so far as the change in the loading is concerned?
  - A. Yes, sir.
- Q. If any of these curves here were made on the top of the wave, you would say that that was under the worst circumstances?
- A. I would have to put this vessel on the crest of a wave and put her in the hollow of a wave and actually figure it out before I could make a definite answer to that.
- Q. If it is on top of a wave there are other strains coming in?

  A. Other sheering strains?
- Q. Other sheering strains and also other bending strains? A. Yes.

- Q. What would you call the strain that is produced by putting a vessel on top of a wave, what effect has it on a ship generally?
- A. The vessel on the crest of a wave, it is called a hogging strain, and on the hollow of a wave it is called a [345] sagging strain.
- Q. If it is on top of a wave, or if it is on the hollow of a wave, there are special strains coming in; if on top of the wave the tendency of the extremities is to come down and push up the middle? A. Yes.
  - Q. That is why it is called the hogging strain?
  - A. Yes.
- Q. And if on the hollow of the wave, she is supported on the extremities and the tendency would be for the middle to sag down? A. Yes.

Further Redirect Examination.

Mr. CAMPBELL.—Q. Would the movement of the wave affect the sheering strain at all?

- A. Yes, it does affect the sheering strain because it changes the shape of my curve of buoyancy.
- Q. Would it change it corresponding to what counsel has asked you?
  - A. I do not understand your question.
- Q. You say that movement of the ship upon the wave would change the sheering strain? A. Yes.
- Q. I say would it change it in a corresponding manner to that described by counsel in his question just now? A. Yes, practically.
- Q. For our own information, Mr. Dickie, is it possible for designers of a ship like the "Olympic," the

great ship that has just been built, to calculate before her keel is laid just what her water line will be?

- A. Oh, yes, it is calculated to within half an inch.
- Q. Is calculated as to the amount of water she will draw? A. Yes.

(A recess was here taken until 2 P. M.) [346]

#### AFTERNOON SESSION.

## Testimony of David W. Dickie, for Libelants (Recalled).

DAVID W. DICKIE, recalled for further examination.

Mr. CAMPBELL.—I will offer in evidence, if your Honor please, the drawing made by Mr. Dickie, and with Mr. Hengstler's consent, I will also offer the other drawing.

Mr. HENGSTLER.—I will offer the other drawing in evidence.

(The drawing of Mr. Dickie is marked Libelant's Exhibit "E," and the drawing offered my Mr. Hengstler is marked Respondent's Exhibit No. 1.)

Mr. CAMPBELL.—Q. I wish you to explain a little more, Mr. Dickie, the character of sheering strain which is produced on the vessel and the location of that strain.

A. The character of the sheering strain is best illustrated by using this book. The sheering strain tends to bend the bottom of the vessel like that (illustrating), at the point where the bottom of the curves or the top of the peaks.

Q. What does that represent in actual stowage?

- A. That represents in actual stowage the ends of the pig iron.
- Mr. CAMPBELL.—If I may, I will lead the witness to the extent to make it clear.
- Q. That strain is as though you take the edge of a book between your finger and thumb—
  - A. Close together.
  - Q. And work them up and down?
  - A. And work them up and down.
- Q. What would be the bending strain as indicated by the drawing produced by the counsel?
- A. That would be represented by taking the book and holding the two ends so that it could not slip by, and bending like that (illustrating); the lower edge will cripple in a hogging strain and the upper edge will cripple in a [347] sagging strain. What actually happens in a ship is that the metal compresses together like rubber and stretches on the lower edge. I am speaking of the builders bending moment curve. The way we measure that stretching or compressing of the metal is by a Stromeyer's Strain indicator. The way we take the strain is by passing a piece of wire through the steel, and with a very small fulcrum we take another piece of wire and fasten it on this metal (pointing). When the metal comes together we multiply the compressing or stretching of the metal by using a very short fulcrum between the wires and a very long straw away from the fulcrum, which multiplies the motion at the end of the straw so that we can see it and measure it.

- Q. Where does the bending strain affect the vessel?
- A. The bending strain affects the vessel as an entirety, as a total structure.
- Q. In what portion of the vessel will it have the greatest effect?
- A. The bending strain will have its greatest effect along the deck of the vessel, tending to stretch the deck and tending to compress the bottom of the vessel.
- Q. Where would the sheering strain have its greatest effect, on what portion of the vessel?
- A. On the bottom of the vessel where the load is resting.
- Q. In your judgment, what effect would a sheering strain such as you have described have on the butts of the plating on the bottom of the vessel?
- A. I am assuming that the Court knows how a butt is made.
  - Q. We had it described this morning.
- A. When you moving the plating or the parts of the ship by [348] one another the butts of your plating close together, or open out, and it destroys the caulking. For that very reason we now lap the plating of the ship because when you move the lapped plating, the caulking is so arranged that the original spring of the plate takes up this motion.
- Q. Would such a sheering strain have the effect in your judgment to cause a butted plate to leak?
  - A. Such a sheering strain would, yes.

Further Cross-examination.

Mr. HENGSTLER.—Q. As far as one bending strain is concerned, Mr. Dickie, are you prepared to say it does not affect the bottom of the vessel?

- A. No, sir, I am not prepared to say it does not.
- Q. It affects the bottom of the vessel?
- A. It does affect the bottom.
- Q. It may affect part of the bottom of the vessel, may it not, taking into consideration the experience that the ship has got struggling with the waves at the same time?
- A. Yes, sir; it will affect any part of the vessel though it might not affect them so that you would notice it.
- Q. You cannot tell exactly how it will affect different parts of the bottom, can you?
  - A. Not without taking each part in detail.
- Q. Would the bending strain, if there is a bending strain, exercised on the hull of the vessel, produce leaks in the vessel?
- A. You mean if you have an excess of bending strain it would produce a leak? It is quite possible to have a large bending strain, and you will not have an excess because the neutral axis of the equivalent girder of the vessel—wait a moment. I have got that wrong, I made a mistake. The vessel has such a [349] large equivalent girder and the top of deck, and the bottom are quite a long distance away from the neutral axis, so that it would take quite a large strain before you would be able to notice it at all.
  - Q. Under the ordinary conditions?

- A. Yes, sir, under the ordinary conditions.
- Q. That leaves out of consideration any particular conditions that happen at sea to which the vessel is exposed at sea, does it not? A. Yes, sir.
- Q. And it is a fact, is it not, that the bending strain may very materially affect the bottom and act upon any part of the bottom of a vessel?
- A. Not in general practice; not in ordinary ships going to sea.
  - Q. The bending strain would not affect it?
- A. No, sir; because the amount of material that is put in there is far in excess of anything that is necessary for bending.
- Q. You are willing to state that no matter how great the bending strain is on the vessel, that that would make no difference to the bottom?
- A. No, sir, that is not what I state. What I state is, you could not load the vessel, you could not put an ordinary cargo into a vessel and produce a bending strain on her that would make any material difference to the vessel unless you could put the pig lead, or something like that, right in the ends and left the whole interior of the vessel vacant.
- Q. There are methods of stowage that would produce a bending strain such that it would be serious to the plates and butts in the bottom of the vessel, are there not?
- A. It is within the bounds of possibility but I do not believe it is probable. [350]
- Q. Would the strain upon the bottom of the vessel be greater if the vessel is improperly stowed than it is

(Testimony of David W. Dickie.) if the vessel is properly stowed? A. Yes, sir.

Q. It would be?

A. Yes, sir. There is only one case in which that has been actually demonstrated. That had to be demonstrated on a torpedo boat in order to get the material thin enough so that the Strohmeyer Indicator would indicate the strains and stresses that were in the vessel. In a torpedo boat the material is about the thickness of this (illustrating).

Mr. CAMPBELL.—That concludes, if your Honor please, the testimony for Meyer, Wilson & Co., in both these cases.

The COURT.—Have you any testimony, Mr. Hengstler?

Mr. HENGSTLER.—On behalf of the libelant in the freight case and the respondent in the damage case, I offer in evidence the depositions of Captain Lalonde, the master of the vessel, Captain Rio, Captain Ledru, Captain Beaudry, Captain Le Roy, Captain Plisson, Captain Girard. Furthermore, I offer the depositions of A. Vanveen, Dendrik van der Berg, Y. de Yonge and of E. Deddes, and as I may possibly have missed offering some depositions, any other despositions that are on file and have been taken on behalf of the ship, together with the exhibits accompanying these depositions.

(By consent Mr. Dickie is allowed to withdraw his diagram to make a tracing, and file the same.)

Mr. HENGSTLER.—If your Honor please, with reference to possible other testimony that we may

desire to take in this case, I think I explained our position to your Honor at the [351] beginning of the case. The testimony which was taken yesterday and to-day is new testimony taken years after the other testimony was introduced. I had reason to believe that the testimony formerly taken was the entire testimony and that the case would simply be argued. For that reason, very fairly and properly Mr. Campbell and Mr. Page agreed that if any new points should come into this case through the testimony taken yesterday and to-day, that I should have an opportunity to rebut that testimony. I should like to reserve the right to decide whether I wish to rebut the testimony, for one week, but I am ready otherwise to argue the case subject to any testimony that I may conclude to take. I may conclude not to take it, and I will indicate that to your Honor at the end of the week—one week from to-day.

The COURT.—Very well.

Mr. CAMPBELL.—I do not want to withdraw any stipulation made by our office, if your Honor please. The only thing is I dislike to delay the case until depositions are obtained from Europe again. Counsel might have anticipated such a line of testimony. He had in his possession these charts. If he is permitted to take depositions in Europe I shall want the order restricting him to testimony that is strictly in answer to the testimony brought out by Mr. Dickie. I purposely avoided going into a scientific explanation of what Mr. Dickie has done so as to avoid if possible the taking of depositions. In

my view of the case, under the law, I think the Court will be in a position to determine the liability without referring even to Mr. Dickie's testimony. If the Court should come to that same conclusion it may not be necessary for him to take [352] the depositions.

Mr. HENGSTLER.—I am strongly of the same opinion at the present time, but I should like to examine the testimony more closely before positively making up my mind.

Mr. CAMPBELL.—I do not see how counsel got the idea that we were willing to submit the cause on his testimony.

Mr. HENGSTLER.—This case was in charge of Mr. Page, Mr. Campbell, and we had the case once set for argument.

Testimony closed.

The COURT.—Proceed with the argument, gentlemen.

(Whereupon counsel proceeded to argument.)
[353]

Tuesday, January 18th, 1912.

Mr. CAMPBELL.—I understand, if the Court please, that there is no formal order consolidating the two cases, and I will therefore ask your Honor to make the order, namely, that the cases of Herman L. E. Meyer et al. vs. French Bark "Duc d'Aumale," No. 13,959, and the Compagnie Maritime Francaise, a French Corporation, Libelant, vs. The Cargo of the French Bark "Duc d'Aumale," No. 13,941, be consolidated and submitted upon the testimony and argu-

ments in the case of Herman L. E. Meyer et al, Libelant, vs. The French Bark "Duc d'Aumale."

The COURT.—Let the order be made.

[Endorsed]: Filed Feb. 6, 1912. Jas. P. Brown, Clerk. By Francis Krull, Deputy Clerk. [354]

### Testimony Taken in Open Court on Further Hearing.

Friday, February 2d, 1912.

#### Testimony of H. P. Frear, for Respondent.

H. P. FREAR, called for the respondent, sworn.

Mr. HENGSTLER.—Q. What is your business?

- A. Shipbuilder and naval architect.
- Q. How much experience have you had as a shipbuilder and naval architect?
- A. I have been employed at the Union Iron Works for 28 years.
- Q. You have been employed there as naval architect?
- A. Yes, most of the time as naval architect for the institution.
  - Q. Do you know Mr. David W. Dickie?
- A. Yes, sir. He worked under me at one time as a learner.
- Q. You have read the testimony which he gave in court the other day. I showed you the testimony, did I not? A. Yes.
- Q. And you have read it with reference to the strain alleged to have been exercised upon the bottom of the French bark "Duc d'Aumale"; you have read that testimony, have you not? A. Yes, sir.
  - Q. I will show you the curve drawn by Mr. Dickie

as purporting to describe the nature of the stress exercised upon the bottom of the vessel by the 600 tons of pig iron stowed in the hold of the vessel. I show you this curve. Libelants' Exhibit "E"; what does this curve represent?

A. This is a partial calculation to arrive at the strain forces on a vessel. There is nothing here to indicate any internal forces or any stress on the members of the vessel, but simply the forces that are acting on the outside of the ship, or upon the ship. Mr. Dickie has drawn a buoyancy curve [355] here, which you will note though not quite symmetrical is very nearly symmetrical about the center line; in other words, the fineness of the two ends of the ship, as Mr. Dickie has represented them here, are very nearly alike. Then Mr. Dickie has drawn a line here representing, as he states, the weight of the ship; in other words, a vertical line at this point we will say, taking one foot of that line represents the weight of the one foot of lineal length of that ship; then on top of that he has evidently drawn the weight of the coke along here; then he has evidently drawn the weight, as he states here, of the pig iron. He has indicated the mass at these three points. He has shown all of the weight concentrated—I don't know whether it is the water line length or the normal length of the ship. (Addressing Mr. Dickie.) Does this line represent the length of the ship or the length of the water line?

Mr. DICKIE.—That represents the length of the water line.

A. (Continuing.) He has shown nothing projected beyond the water line at either end; for instance, you have a strain overhanging and you have a bowsprit overhanging. It is essential, in order that a diagram of this kind is worked out correctly, that the buoyancy must be exactly the same as the weight that the buoyancy supports; in other words, if your ship was a little heavier than the line drawn here for the buoyancy, the ship would settle down until she came to rest. It is also essential that the center of all this weight must come in the center of the buoyancy. In other words, if the center of the weight is over here pulling down, and the center of buoyancy is over here pushing up, the ship would tip until the two came together and the ship came to rest. It does not appear from [356] the diagram here that that would exist. It does not appear that there is enough information here to make the calculation because there is a heavy bowsprit overhanging here that is not taken into account to determine the center of gravity. The stern end is not taken into account. Therefore the center of gravity of this weight area would not be the center of gravity of the He has the pig iron up here. I think from a casual examination it is apparent that the weight of this outside figure—here is the weight of the coke here, the top of his weight at that point, and here is the top at that point, it is apparent that the center of gravity of this area would be considerably aft of the center of his buoyancy. Therefore the condition as it is drawn could not exist. As I take it.

Mr. Dickie has merely drawn that to illustrate such a thing as a shearing force because he has only carried his problem up to that point and then stopped. That is only one step toward the ultimate object of a calculation of this kind. The ultimate object of a calculation of this kind is to determine bending moments, which are far in excess of the shearing stress or shearing force. This is not shearing stress, it is shearing force. Stress is internal or resistant; force is application. This shearing line here is the sum of the forces acting up. So there is the maximum shearing force (pointing). That is obtained by taking the sum of all the forces acting from either end of the vessel, because they would be alike. It is the algebraic sum of all the forces acting up to that point. In other words, the shearing force is the sum of the actual forces or weights acting on either end of the vessel. Now, what is the bending moment? Mr. Dickie in his testimony [357] says that he integrated this curve of Lloyds' here. He has integrated that to arrive at this point here, or any other point. But integration is summation.

Q. To arrive at what maximum point, Mr. Frear?
A. Well, at anyone. I was just considering the maximum point. Well, maybe this is the maximum point. These two are the maximum points of shearing force, not stress. When you integrate you add. In other words, in plain English, the shearing force is the sum of all the forces or weights acting on either side of that, because they are equal. Now, what is the bending moment? The bending moment is the

sum of all the shearing forces; in other words, as an arithmetical progression, so to speak, you first add up all your forces to get the shearing force. Now, that is force. When you add up all your shearing forces to get the bending moment. The diagram is not carried beyond getting the force at any and every point—the shearing force at each and every point of the diagram is correct. And I doubt very much that it is from the fact that it appears there has been some assumption.

Q. What assumption has he made here with reference to the weight of this ship?

A. Well, take the data that is necessary to obtain this buoyancy. You must have what lines of the vessel? The lines show the section at all points of the ship, at each frame or space you want to take; and from that you can by getting the area of each section below the water line, you erect a perpendicular representing that on any scale you choose, and then taking the different points and running a line through them, that gives you the buoyancy curve. It is not only essential [358] to have the lines, but the draught and the trim. If the trim varies you have a difference at one end or the other. Now, for the weight curve, you have to have the detail weights of the vessel, you have to have the weight of that vessel at every foot all the way along in order to make it correct. You not only have to have the weight of the total vessel, and that area there must equal that weight, but you have got to know exactly how the weight in that ship is distributed, that is, you

have to be able to construct that curve from the weight taken all the way along that vessel. Then Mr. Dickie has put in the coke. Of course, what I have said as to the weight of the vessel applies to the coke. You have to have the distribution of that coke; you have to know just how much is in each foot of the vessel. And the pig iron the same way, you have to know just how that is. And he has put the mass above everything there. Now, one reason why I think there is a great deal of assumption is that I doubt very much if that curve is not a little further; that it would be in here somewheres. I would also strongly criticise the weight of the vessel as given by Mr. Dickie. I think Mr. Dickie's weight is in excess of what a vessel of that size and build would run.

- Q. What leads you to think so?
- A. Well, it does not compare favorably with other vessels of about that type and size.
- Q. Are you acquainted with a vessel of that type and size and do you know its weight? A. Yes, sir.
  - Q. In such a way that you can draw a conclusion?
- A. Well, there are always some differences in vessels, but by exercising proper care you can make fairly close comparisons.
- Q. What vessels do you compare this one with? [359]
- A. Well, I have probably got the plans of over 50 sailing vessels. Here is a plan of a similar type. This is the "Queen's Island," a three-masted bark.
  - Q. Is that a French vessel?

A. No; this was built at Holland & Wolf's, Belfast, Ireland. This vessel is a little larger so far as the dimensions are concerned. If I remember, the "Duc d'Aumale" was 277 feet; this one is 282 feet. I think her beam was 40.3; this is 40.5. (Addressing Mr. Dickie.) Is that right, Mr. Dickie, that the "Duc d'Aumale" was 40.3?

Mr. DICKIE.—I do not remember the beam.

Mr. HENGSTLER.—Yes; 40.3.

A. (Continuing.) I will refresh my memory. Yes, 40.3. The depth of this vessel is 23.6, or a little more than a foot deeper than the "Duc d'Aumale," which was 22.5. Now, in addition to that, the "Duc d'Aumale" was a complete steel vessel. This vessel is part steel and part iron. When vessels were first built of that type, they were built of iron and not of steel. The construction was changed to steel for one reason, to save weight; in other words, a vessel built of iron would be 20 per cent heavier than a vessel built of steel. This vessel is part iron and part steel. The builders give the weight of this drawing at 1,280 tons, or a little less than 160 tons of the assumed weight of the "Duc d'Aumale."

Q. So here is a much larger ship?

A. It is a larger ship and part iron, and weighs less. This compares with a large number of vessels, the plans of which I have.

Q. Does this assumption affect the result that Mr. Dickie intended to convey by that curve? [360]

A. The basis of the calculation depends on all

those items, buoyancy and weight. That is the basis of the calculation.

- Q. And the basis is wrong in that respect?
- A. The calculation is not complete. It is only the second step in the calculation. A calculation of this kind is never carried to this point and stopped. These calculations, so far as they go, and if this was completed, apply to the ship as a whole and not to any location. It is not applicable to a local force.
- Q. What part of a ship do shearing forces act upon?
- A. Sheering forces act almost entirely or chiefly upon the vertical plating, or the side-plating.
- Q. What forces act upon the horizontal portions, the decks and the bottom of the ship?
- A. The decks—the top plating and the bottom plating—is affected chiefly and resists chiefly the bending moments.

Mr. HENGSTLER.—Does your Honor desire an illustration as to why that is necessarily so? I think Mr. Frear can give a simple illustration with a girder showing that the shearing force cannot affect materially the horizontal portions—the decks and the bottom of the vessel, the plates on the bottom.

The COURT.—I understand the way he defines shearing force as strain pressure.

Mr. HENGSTLER.—It does not affect the bottom pressure or the deck in any way, but would affect merely the sides, the side plating.

The COURT.—The sides.

Mr. HENGSTLER.—Q. Are you acquainted with

- a Manual of Naval Architecture written by White?
  - A. Yes, sir. [361]
- Q. That is a standard work, is it not, on naval architecture? A. Yes.
- Q. If on page 299 of that work the author makes the following remark after calling attention to the chief strains to which ships are subjected, and calling the chief strain a strain tending to produce a longitudinal bending, hogging or sagging, that those are the chief strains in the structure considered as a whole; and he mentions then three minor strains and goes on to say as follows:

"Besides these, there are other strains of less practical importance, which are interesting from a scientific point of view but need not now be discussed as there is ample strength in the structure of all ships to resist them, and there is no necessity in arranging the various parts to make special provision against them. Theoretical shearing forces, for example are in action in all ships; they tend to shear off the part of a ship lying before any cross-section from that abaft it; but no such separation of parts has been known to take place, nor is it likely to be accomplished in ordinary ships."

Do you approve of that statement by the author? A. Yes, sir.

Q. What would happen to a vessel before the shearing strain could become operative so that it would cut the plating; what would have to happen long before that?

- A. Which plating are you referring to?
- Q. The bottom plating.
- A. You would have to fracture the vertical plating. I will illustrate that with two little pieces of cardboard. If you assume that you had a ship without any side plating, the top piece represents the deck and the lower one the bottom of the ship, you could bend that, there [362] would be no great resistance, no more than the stiffness of the plate resting on its sides, which you could work up and down almost indefinitely without producing a fracture. Now, if you turn the cardboard up and even though you had no deck on at all, which takes practically only the bending moment, you could not shear that. The paper alone, if you could hold it in position, you would not have strength enough to shear that paper in a vertical position; but in the horizontal position you could work them to your heart's content and they would not fracture for a long time. It is like a piece of tin, you can bend it up and down, but put it edgewise, where it would take shearing force and resist it, you could not force it apart. You would have to fracture the sideplating before you could produce any appreciable strain due to shearing on the bottom or the top.
- Q. So it is to this effect, that in the practical consideration of strains upon the bottom or on the deck, only bending forces are considered?
- A. Only bending forces. You could distribute the material in a vessel in such a way that the calculation would show that she had an excess of strength; in

other words, if you took half the material off the side-plating and put a portion on the deck and a portion on the bottom, your calculation would show that that ship was very much stronger, whereas, as a matter of fact, the thinner plating might not be sufficient to resist the shearing or to keep the deckplating and the bottom plating in their relative positions and hold them there; in other words, it might cripple. [363]

Cross-examination.

Mr. CAMPBELL.—Q. Did you ever hear of a ship's bottom working so that her seams are opened?

- A. Yes, sir.
- Q. Well, how is that possible, on your theory?
- A. Well, that is generally due to bending.
- Q. Due to bending? A. Yes.
- Q. What do you mean by bending, under those circumstances?

A. I mean a ship riding on the crest or in the hollow of a wave, that she works alternately up and down.

Q. Supposing you should take a sailing vessel and not put anything in forward at all, but toward her mizzen mast, between her mizzen mast and toward the mizzen mast you should put in 1,000 tons of pig iron—take a ship like the "Duc d'Aumale"—what if any strain would that effectually put upon the bottom of the vessel in a sea?

A. It will produce a local stress there, not a general stress.

Q. A local stress? A. Yes.

- Q. But that stress would tend to open her seams, would it not? A. No, I do not think it would.
- Q. Supposing her seams opened up under those conditions?
- A. I would say it was due to bending; you would get an excess of bending, comparatively speaking, by loading a ship in the middle. It is just like a girder; you support it on two ends and load it in the middle, she tends to bend down.
- Q. So the strain which would result in loading a vessel in that way, heavier at one end and lighter at another, you would call it a bending moment; is that it?
- A. I call the bending moment due to bending forces.
- Q. Well you know, as a matter of fact, that that would result in a strain, do you not,—that if you loaded a vessel say [364] with 1,000 tons of pig iron at a point just forward of the mizzen mast, and put in cargo in the rest of the hold, that would strain her, would it not?
- A. Well, so far as a diagram of that kind is concerned—
- Q. (Intg.) Just answer the question; would not that strain that vessel?
- A. It would depend upon whether it was more than the vessel was built to stand.
  - Q. Would it not tend to strain the vessel?
  - A. It would make more strain than without it, yes.
- Q. That is the operation of buoyancy forces, is it not; it is due to the operation of buoyancy forces?

- A. You have to have buoyancy and weight forces.
- Q. The combination of the two?
- A. Yes, the balance of the two.
- Q. In your judgment would the difference between the weight of the cargo above and the pressure of the water below produce a local shearing force?
- A. No. Maybe I did not understand that question. Will you repeat it?
- Q. I say in your judgment would the difference between the weight of the cargo above and the pressure of the water below produce a local shearing force?
- A. No. I stated that the local shearing stress was the sum of the forces between the given point and either end of the vessel.
- Q. Would an excessive weight in one part of the vessel with an excessive buoyancy immediately adjacent to it produce a local shearing force at the point of division?
  - A. Well, as I understand your question—
- Q. (Intg.) I cannot word it in the language of higher mathematics. [365]
- A. Your buoyancy curve is a fair curve, a fair line, if I understand what you are getting at; if that would be a uniformly varying space all the way along the vessel, a fair curve—
- Q. (Intg.) I will put it in this form: If there is an excess of weight over buoyancy in one part of the vessel, and immediatly adjacent to it an excess of buoyancy over weight, would there be a local shearing force produced on the bottom of the vessel?
  - A. No, not on the plating.

- Q. On the bottom?
- A. No, there would not. There would be a little on the frame, but you could not strain your bottom.
  - Q. Wouldn't there be on the bottom as a whole?
- A. Well, yes, but as I explained before, if the bottom plating was detached it would be limber and you could work it up and down. To provide for local forces or weights there is a framing inside the plating and you could not strain your plating due to a local weight until you fractured the framing.
- Q. But there would be, however, a shearing force produced upon the bottom of the vessel, would there not?
- A. Well, in the same way that the shearing force produced on this floor right where you are standing now—
  - Q. (Intg.) Well, there is, is there not?
- A. If that were soft you would sink down in and you would shear a little hole right around there.
- Q. So there is a shearing force at that point, however infinitesimal it may be?
- A. The shearing force is taken up by the framing. There is a shearing force there but it does not come on the plating until the framing gives way. [366]
- Q. If the plating showed trouble at this particular point would you not imagine it was due to a shearing force?
- A. I never saw it, and I have been repairing ships all my life.
  - Q. You would not say there was not?
  - A. I certainly would. The plating is never put

there to take shearing force. The side-plating takes the shearing force, 99 per cent of it.

- Q. Would the shearing force tend to produce an oscillating vibration in the plating?
- A. Well, I never have heard vibration used in that term; you have to have a fixed weight and—
- Q. (Intg.) Would it tend to produce the movement you get from working a paper, as I work it here with my fingers (illustrating)?
- A. No, it would have to work the framing first. The framing would reach the point of fracture before you could have any perceptible movement or working on the plating. You have stiff deep floors in there, and they would have to fracture before you could strain a seam or a butt of the plating due to working up and down, as you say there.
- Q. There is a certain elasticity in the frame, is there not? A. No, not very much.
  - Q. There is to a certain degree, is there not?
  - A. Not hardly measurable.
- Q. What is the elastic limit of steel, in thousands of pounds?
- A. Oh, it runs around 26,000,000—oh, excuse me, the elastic limit of Lloyd's steel generally runs around between 30,000 and 40,000.
  - Q. What is the breaking strain?
  - A. Around 60,000; it is 57,000, 58,000 or 59,000.
- Q. Is there not a margin between those two points where the steel can vibrate? [367]
  - A. That vibration is not the term that you want to

use there. I never heard of vibration used in that connection.

- Q. You do not know what is meant by that question? A. I do not know what you mean by it, no.
- Q. How do the weights which Mr. Dickie apparently used compare with the weights produced by Mr. Hengstler?
  - A. You mean on this diagram?
  - Q. Yes.
- A. He has not given any weight curve on there; he has simply given the bending moments. That is the result of the calculation.
- Q. Are not the weights boxed in up there on the side? A. I do not read French very well.

Mr. HENGSTLER.—He has given the weights of the ship, of the coke and of the pig iron.

A. Well, he has given the weight of the ship there at 1396.

Mr. CAMPBELL.—Q. Are those French or English tons?

- A. I would judge they were French tons; I do not know.
- Q. How does that compare with the weight that Mr. Dickie gives? A. Lighter.
  - Q. How much lighter?

A. 44 tons; it would be greater than that if those are French tons.

Mr. HENGSTLER.—Mr. Dickie's were English tons.

The WITNESS.—The French always use the French tons; that is about 1½ per cent lighter.

Mr. CAMPBELL.—Q. What percentage of the whole weight of the ship would that be?

Mr. HENGSTLER.—Oh, anybody can figure that out.

A. Anybody can figure that. Mr. Dickie has a slide and let him figure it. [368]

Mr. CAMPBELL.—I am not a mathematician.

- Q. Can you give it to us approximately?
- A. Let Mr. Dickie do it; he has a slide rule there.
- Q. We want you to do it.
- A. I do not admit that these are English tons. I never saw a French ship figured out on English tons.
- Q. How do you account for the seams in a ship's bottom opening up?
- A. I have not read any of the depositions or any further testimony outside of Mr. Dickie's. I do not know what the conditions were; I do not know what the damage was.
- Q. If you had a ship come into port with a loaded cargo and she had her butts opened up so that they necessitated caulking, and she had two or 300 rivets leaking on the bottom, what would be the cause of it?
- A. If it were on the bottom plating I would say it was due to bending. If that would not account for it, I would say that the captain touched bottom and never said anything about it.
  - Q. It could be produced by a strain, could it not? A. Certainly.
  - Q. (Mr. HENGSTLER.) A bending strain. Mr. CAMPBELL.—Q. It could be produced by a

strain which could be produced by loading the ship so that you would have excess of heavy weights in one part and excess of light weights in another, could it not? A. Well, it would depend on conditions.

Q. It could be done, could it not?

A. If it were sufficient, yes.

Mr. CAMPBELL.—That is all.

Mr. HENGSTLER.—That is all. Does your Honor want this [369] diagram?

The COURT.—No. I am not going into the ship-building business.

# Testimony of William Schirmer, for Respondents (in Rebuttal).

WILLIAM SCHIRMER, called for the respondents in rebuttal, sworn.

Mr. HENGSTLER.—Q. What is your business? A. Stevedore.

Q. How much experience have you had in the stowage of sailing vessels?

Mr. CAMPBELL.—Just a moment. Mr. Hengstler, are you calling this witness to answer any of the scientific matter that Mr. Dickie produced?

Mr. HENGSTLER.—No.

Mr. CAMPBELL.—Then I object to the reopening of this case for the purpose of calling stevedores.

Mr. HENGSTLER.—There was expert testimony of captains given here,—captains who have lived around the bay here for about ten years, captains who have not been going to sea at all. They were called for the purpose of showing that the stowage

was improper. I am calling experts for the purpose of showing that it was proper.

Mr. CAMPBELL.—But we tried that feature of the case. My understanding was, if your Honor please, that this matter was continued for the purpose of giving Mr. Hengstler an opportunity to answer the scientific matter Mr. Dickie produced. This is going back to a retrial of the case.

Mr. HENGSTLER.—I have the right to rebut your testimony.

The COURT.—I understood that you desired to take some testimony in a foreign country and that then the case would be closed. You may open it again, if you desire, as you have the witnesses here.

[370]

Mr. CAMPBELL.—I understood he was to answer the testimony given by Mr. Dickie.

The COURT.—That is the way I understood it.

Mr. HENGSTLER.—I do not desire to offer any testimony, if your Honor please, that your Honor does not understand I have the right to offer.

Mr. CAMPBELL.—I have not come here with my records at all to take the testimony of this witness.

The COURT.—You may present the testimony of the witness.

Mr. HENGSTLER.—Q. How much experience have you had in the stowage of sailing vessels?

A. Just the loading and the stowing of vessels, you mean? You do not mean how long I have known and handled vessels. About 14 years' experience with deep water vessels.

- Q. How many French vessels have you discharged in that time? Just about how many? I just want a general idea.
- A. I could not tell you exactly without looking at the record, but I suppose on an average 6 or 7 a year, maybe; something like that; 5 or 6.
- Q. Do you know the French bark "Duc D'Aumale"?
  - A. Yes, I discharged her on her arrival here.
- Q. You discharged her the last time she arrived here? A. Yes, sir.
  - Q. What did she carry at the time?
  - A. She had coke and pig iron.
- Q. The testimony shows that she arrived with 2,660 tons of cargo, 1,900 tons being in the lower hold and 760 in between decks; 2,000 tons of her cargo were coke and 660 tons were pig iron. Of the pig iron, 60 tons were in the between-decks and 600 tons in the lower hold, this latter 600 tons being in the [371] lower hold in the following way: They consisted of one body immediately aft of the main hatch, occupying a space about 65 feet long—between 63 and 65 feet long, 29 feet wide at one end toward the stern and 36 feet at the other end; the height of the pile was 3 4/5 feet; the pile covered an area of somewhat more than 2,000 square feet; all the rest of the space, except the 60 tons of pig iron in the betweendecks, was filled up with coke. I ask you whether, in your opinion, the stowage of those 600 tons of pig iron in the hold was good stowage?

Mr. CAMPBELL.—Just a moment.

Q. Have you ever had any experience in stowing that kind of cargo?

A. No, sir; we do not load that kind of cargo here.

Mr. CAMPBELL.—Then we object to the question, if the Court please. The witness is not qualified as an expert.

The COURT.—It may go into the record for what it is worth.

Mr. HENGSTLER.—He might have a criterion upon which he goes.

- A. I am not a builder.
- Q. What is your opinion?
- A. Well, if it was my ship I would load her that way, if she needed it to be trimmed. You know those vessels usually need the weight aft to trim them, especially when they only have a small amount of weight like that, 600 tons. That is only a small amount of weight in a vessel of that size, and they have to distribute it to trim her.
- Q. You have seen other vessels loaded with similar cargo, have you not, that arrived here in San Francisco?
- A. Oh, yes; sure. I have discharged them. When they have only 500 or 600 tons, they usually have it together that way. They spread it out as far as it will go, 3 or 4 feet high, in the aft ends of those vessels. Of course, I do not know anything [372] about the construction of ships, you know.
- Q. But in the case of ships of the type of the "Duc d'Aumale" that you have observed and you have seen, and which you have unloaded, you find that the

stowage is similar, is it not, with that kind of weight?

A. With amounts not over that in weight. If they have more weight than that, of course, they distribute it may be more forward; they generally keep it pretty compact. They spread it out all over, not leaving any spaces between—as a rule.

Q. In a case where the weight is 600 tons, you think that is not too large?

A. Not if it is in one end, no, not if it is spread out in that distance. Of course, the captains usually load the vessels you know, and they know what they want. He is the best authority on those things always.

Q. The person who is familiar with the vessel and has loaded her in the past is the best authority?

A. That is my experience. The captain always loads the ship.

Q. Is it possible to load a ship with which you are not familiar, and of which you had not known anything about the way she behaves with particular cargoes, could you load her properly the first time—if you are given a cargo of pig iron and coke?

A. No. According to my knowledge, and the way the captains explain it, they acted differently. Some vessels want weight in the lower hold; some want it distributed in the between-decks. That is my experience. The captains generally tell you that. They tell you how they want the weight, and how much, and where they want it.

Q. What does it depend upon as to where it should go?

(Testimony of William Schirmer.)

A. Some vessels are stiffer than others. Some claim they need the weight on top to keep them from rolling. Others want [373] it below. Especially that is so with sailing ships; they claim they roll and throw themselves around if not properly loaded. The captain is the only one who knows that part of it.

Q. Do you know the "Tillie E. Starbuck"?

A. Well, I have known her only by seeing her once. I think she was built around 1880 or 1882, or somewhere about that time. I think she was about the first steel or iron vessel built in the United States—a sailing ship. I do not think she was then much of a success according to my reading about her; I don't know much about her, though. She made long voyages and so on. She looked somewhat different from other vessels, from the outside.

Q. Was she different in type from the "Duc d'Aumale"?

A. She appeared entirely different to me, according to my recollection. That is a long time ago. I was before the mast myself at the time and I know we talked about it. We did not think much of her looks.

Q. Did you know the bark "Silberhorn"?
A. No.

## Cross-examination.

Mr. CAMPBELL.—Q. You were never master of a vessel carrying coke or pig iron, were you?

A. No.

Q. Were you ever master of a vessel? A. No.

Q. All you know about the stowage of cargoes is

(Testimony of William Schirmer.)

the experience you have had here in San Francisco?

- A. No. I have been to sea. It is 40 years ago when I first went to sea before the mast, in wooden vessels. They were American ships. I got up to be first officer when I quit. I went as pilot down the Southern Coast.
- Q. Were you ever in charge of the stowage of a sailing vessel? [374]
  - A. No, we only loaded with grain.
- Q. Were you ever in charge of the stowage of a vessel when you were going to sea?
  - A. No, I was only before the mast in sailing ships.
- Q. Your experience with the stowage of cargo in sailing ships has been confined to San Francisco?
  - A. Yes, sir.
- Q. And that is the loading of homogeneous cargo, barley or wheat?
- A. Yes. Of course, we have loaded steamers with different cargoes here.
  - Q. I am talking about sailing ships now.
  - A. Yes.
- Q. If it was necessary to properly trim one of those sailing vessels, and you had 600 tons of pig iron, and you could place that vessel in proper trim by putting it in a certain position immediately forward of the mizzen mast, you could get exactly the same trim by putting a quantity abaft of the mizzen mast, and a quantity forward of the main mast?
- A. Yes, you could split it up; you would have to put it further aft; you could not stop at the mizzen mast. You would have to get the weight aft. You

(Testimony of William Schirmer.)

would simply have to go further, and that is all.

- Q. You saw cargoes come in with heavy weight distributed over the bottom?
- A. Yes, but those ships that generally have 400 or 500 or 600 tons usually have it aft, and sometimes in between-decks. They are hard ships to get by the stern, the French ships especially.
- Q. Sometimes they have it spread all over the bottom, do they not?
  - A. Yes, if they have enough of it.
- Q. How would you account for a ship opening up her butt-seams in the vicinity of the stowage of 600 tons of pig iron?

Mr. HENGSTLER.—I object to the question upon the ground [375] that it is not cross-examination.

Mr. CAMPBELL.—You are producing this man as an expert.

Mr. HENGSTLER.—He is not an expert on everything.

Mr. PAGE.—He is only an expert for you—is that it?

The COURT.—Well, I think he is probably just as expert on that as he is on the other questions.

Mr. HENGSTLER.—He has not said a word on anything except stowage.

The COURT.—No.

Mr. CAMPBELL.—Then you do not want me to examine him on that matter?

Mr. HENGSTLER.—I object to it upon the ground that it is not cross-examination.

Mr. CAMPBELL.—All right.

Mr. HENGSTLER.—I don't want you to examine him on anything that is not proper.

Mr. CAMPBELL.—If that is the sort of an expert you have, we will let him go. That is all.

## Testimony of F. G. Wilson, for Respondents (in Rebuttal).

F. G. WILSON, called for the respondents in rebuttal, sworn.

Mr. HENGSTLER.—Q. What is your business?

- A. I am a stevedore.
- Q. How long have you been engaged in the stowing and the discharging of sailing ships?

  A. 30 years.
- Q. Have you discharged any French ships in this port?
- A. Yes, quite a number; probably more than anybody else.
- Q. You are familiar with the type of the French ships, are you? A. Yes, sir. [376]
- Q. All your experience in stevedoring has been in this port, has it not, Captain Wilson?
- A. I also did some stevedoring in Yokohama, Japan.
  - Q. Do you know the French bark "Duc d'Aumale"?
    - A. I saw her when she was here.
- Q. The facts are in this case that the "Duc d'Aumale" carried 2,660 tons of cargo, 1,900 of those being in the lower hold and 760 in the between-decks; 2,000 tons of the cargo were coke and 660 tons were pig iron; the pig iron was in two piles, one small pile of 60 tons, which was in the between-decks. There was a larger pile of 600 tons in the lower hold

of the vessel, and that was arranged in the lower hold in the following way: It was laid in one body immediately aft the main hatch, occupying a space of 63 to 65 feet in length, 29 feet wide at one end, at the stern end, and 36 feet at the other end, the height of the pile being 3 4/5 feet and it covering an area of more than 2,000 square feet; all the rest of the space in the ship was filled with coke. I want to ask your opinion with reference to this kind of stowage, as to whether it was correct stowage, or not.

Mr. CAMPBELL.—Just a moment.

- Q. Captain, have you ever loaded vessels of the type of the "Duc d'Aumale" with coke and iron?
  - A. Hundreds of them.
  - Q. Loaded them or discharged them?
  - A. Discharged them.
  - Q. Have you ever loaded them?
  - A. No. I have loaded them with canned goods.
  - Q. I am talking about coke and iron?
- A. There never has been any coke and pig iron loaded in this port, not during the 30 years I have been in the stevedoring [377] business.
  - Q. So you have never done that?
  - A. I have discharged them.
  - Q. But you have never loaded them?
  - A. Never loaded them.

Mr. CAMPBELL.—We renew our objection to the testimony of this witness.

The COURT.—It may be admitted the same as the other testimony.

Mr. HENGSTLER.—A man might get a great deal

of valuable knowledge that way.

The COURT.—Well, he can give his opinion; we will determine its weight hereafter.

Mr. HENGSTLER.—Q. What is your opinion with reference to the propriety of the stowage of that coke and pig iron?

A. The 60 tons of pig iron, according to what you state there, I suppose it was put in the between-decks at the last moment to put the ship down to her draught—

The COURT.—Q. He is asking your opinion as to whether it was good stowage. The evidence shows why it was put there. He asked you whether it was good stowage, or not.

A. Yes, sir, I consider it good stowage.

Mr. HENGSTLER.—Q. What reasons have you for your opinion, Captain?

A. Well, the French vessels of the type of the "Duc d'Aumale," and in fact nearly all are French vessels, their upper structure is very heavy; consequently they require a good deal of dead weight in the bottom so as to keep them on their feet, so as to give them stability. If you take the British vessels of the same tonnage as the "Duc d'Aumale," her upper structure would not be—in other words, the tonnage above deck would not be probably within 60 per cent of what [378] the "Duc d'Aumale" or vessels of her type have. The reason of so much upper structure is for the French vessels to get a bonus from the government.

Q. And that necessitates a different loading for

the purpose of making good stowage?

- A. It naturally requires more dead weight in the bottom.
  - Q. What is the strongest part of a vessel, Captain?
- A. Right from the after part of the main hatch, in a three-masted ship, to the fore part of the after hatch, or the after part of the after hatch.
- Q. Is that the part where you put the heaviest part of the cargo?
- A. No, not necessarily. It all depends on the nature of the cargo that the ship is loading.
- Q. In this particular case the pig iron was in that strongest part, was it not?
- A. It was put there on account of getting the vessel in trim. From the after part of the main hatch forward, of course the vessel widens out there. If you did not have your dead weight aft the vessel would go by the head.
- Q. Captain, is it possible to load a vessel safely without being acquainted with her, without knowing how she behaved with similar cargoes in the past?
- A. I should say, so, yes, as long as a man of experience who knows anything about a ship does it. There is a difference, of course, between all classes of sailing vessels, iron, wood and steel.
  - Q. They all have to be loaded differently, do they?
  - A. They all have to be loaded differently.
- Q. What elements have to be considered in loading a ship, making a difference in stowage of the same cargo? [379]
  - A. Well, take for instance an ordinary iron ship;

it would be two-thirds in the lower hold and one-third in the between-decks, whereas you will find some of these sailing vessels that instead of having 60 per cent or 65 per cent in the lower hold, they have as much as 80 per cent. There was a ship here recently, the "William T. Lewis," formerly the "Robert Duncan"; her lower hold had to be packed full with wet cargo; whereas in some other vessels it would be singled down in both ends. But she has her lower hold always filled right up. That is the same with all the vessels of those builders, the Duncans of Glasgow.

- Q. What is that due to, the deviation of the rule?
- A. It is due to the construction of the vessel.
- Q. The construction of the vessel; what do you mean by that?
- A. To the construction of the vessel and also to the way she is sparred.
- Q. You mean the proportion of length and breadth?
- A. No, on account of the way she is sparred. All of those ships have iron masts and iron yards.
- Q. In other words, there is no general rule that fits all ships in loading?
- A. No, sir; there is no stereotype rule for loading iron or steel vessels, or certain classes of vessels.
  - Q. Do you know the "Tillie E. Starbuck"?
- A. I saw her when she was here; I never was on board of her.
- Q. How did she compare with the "Duc d'Aumale"?

Mr. CAMPBELL.—I submit that the witness cannot answer that question. He never was aboard of her.

Mr. HENGSTLER.—Q. Was she a vessel of the same type, or different types? That is all I want to know. [380]

A. She was of a different type altogether. The "Starbuck" is an iron ship and the "Duc d'Aumale" is a steel vessel.

- Q. Did you know the "Silberhorn"?
- A. Do I know the "Silberhorn"?
- Q. Yes.
- A. I discharged and loaded her 3 or 4 times, or superintended it.
- Q. How does she compare in type with the "Duc d'Aumale"?
- A. The "Silberhorn" is an iron vessel, or was an iron vessel.
- Q. And as to her lines, was she built on similar lines or different lines?
  - A. Different lines entirely.

### Cross-examination.

Mr. CAMPBELL.—Q. What is the difference in the lines between the two vessels?

- A. Well, the "Silberhorn" did not have as much upper structure, as many houses on the deck, as the "Duc d'Aumale."
  - Q. Is that a difference in lines?
  - A. Another thing is—
  - Q. (Intg.) Is that a difference in lines?
  - A. The "Silberhorn" was an iron ship, and the

model or the type is different altogether from the French ship.

- Q. What is the difference?
- A. Well, for instance, the "Silberhorn" carried her bearings further aft than what a French ship does. A French ship is narrower. They carry their deadrise further forward.
- Q. You could get the same stability with the pig iron piled over the entire bottom of the ship as if it were piled in one lump, could you not? A. Yes.
- Q. As a matter of fact, the lower you get the pig iron the greater the stability, is it not? [381]
- A. Yes. Of course that is a question. The captains of ships who have sailed the vessel for any length of time have various ideas where the dead weight should be put in a ship. We have an instance here on the coast which is self-explanatory. There is a ship here called the "Star of Bengal"; when she was owned under the English flag they used 400 tons of ballast to move her around the harbor with and 900 tons of ballast to go to sea with. Since we own her here in San Francisco she will stand up with 200 tons of ballast and go to sea with 600. Her spars are identically the same. There was no alteration in the ship at all. It is simply the temerity of the master. He has confidence in what his vessel will do.
- Q. One time that ship rolled her topmast out of her, did she not? A. Which ship?
  - Q. The "Star of Bengal"?
- A. Well, any vessel would do that if she had too much dead weight in the lower hold.

- Q. Too much stability?
- A. Too much stability, yes. She will roll to windward in a heavy sea.
- Q. There has been a great deal of trouble with these French vessels, coming in, with damaged cargo, has there not?
- A. With the French vessels, yes. Oh, Lord, yes; especially when the French first started building these vessels in France; they passed that law giving French vessels a bounty. They just threw them together, you know. The result was that they tore themselves all to pieces.
- Q. So there has been a very rapid deterioration in that class of vessels generally?
- A. A very rapid deterioration. In late years the Frenchmen are beginning to handle their vessels fairly well; they are improving considerably.
- Q. And that deterioration was a deterioration in the structure [382] of the vessel, was it not, due to the working?
- A. Well, I guess it was due to the fact that the vessel was not properly riveted together.
- Q. And a great many of them dropped out their rivets and opened their butts? A. Yes.

### Redirect Examination.

Mr. HENGSTLER.—Q. When you speak of rapid deterioration you refer to a former time, do you not? You do not mean to say that the French vessels, since they began building them, have been getting worse and worse?

A. No, no. I mean that when they first started in

to build these vessels, everybody was in a great hurry to get them constructed; the result was they were not properly constructed. But vessels that were built 3 or 4 years after the rush, they were put together better.

Q. Do you know when the "Duc d'Aumale" was built—what year?

A. I really could not tell you unless you had Lloyd's here.

Mr. HENGSTLER.—Mr. Campbell, will you admit that Lloyd's reports the "Duc d'Aumale"—

The WITNESS—I think she was one of the first built.

Mr. HENGSTLER.—No, she was built in 1900.

The WITNESS.—In 1900, or some time around there; I think it was in 1900 the bounty law was passed in France; I think it was somewhere about then.

Q. But you do not know that, do you?

A. I do not remember. I know that the firm that I was connected with, I know we have handled the bulk of the French vessels.

Mr. CAMPBELL.—Q. It was with the vessels that were built around about that time that they had so much trouble, was it not? [383]

A. Well, along in 1903 or 1904 we had several of them come in here that were in pretty bad condition.

Q. But it was the vessels that were built around about 1900 that they had the trouble?

A. That were built about 1900, yes.

Q. And from your observation you found that they

(Testimony of F. G. Wilson.)
rapidly deteriorated because of the way they were
constructed?

A. Well, they were not properly built and they tore themselves all to pieces. Another thing which made matters worse, to get captains and officers for those vessels was a pretty hard thing; the Frenchmen did not know how to handle them, the job was too big for them.

Q. And they put in boys 25 or 27 years of age, did they not?

A. Oh, a boy 25 years of age! I know a young man who brought the "John T. Perry" out here from New York when he was 19.

Q. That was many years ago, was it not?

A. Oh, I don't know about that.

Mr. HENGSTLER.—Q. Captain Wilson, you do not mean to say that your remarks here apply to the "Duc d'Aumale," do you? You do not know those things about the "Duc d'Aumale," do you?

A. No, no.

Mr. CAMPBELL.—His remarks apply to just what they mean, and that is all.

Mr. HENGSTLER.—Q. You do not know any of these facts about the "Duc d'Aumale," do you?

A. No, sir. I merely say that there were a lot of French vessels that came here, vessels that were constructed immediately after the law was passed giving them a bounty, there were a lot of them poorly constructed. I do not know what year the "Duc d'Aumale" was built in; I do not remember; I never handled her. [384]

- Q. There were some that were well constructed, were there not?
- A. Oh, Lord, yes. A. D. Boards of Paris, one of the largest French owners, all their ships were magnificent ships. It was only a few of these local vessels, a lot of new ship owners sprung up. The old stereotype ship owner, like A. D. Boards, and one or two more, their vessels were all properly built. It was only these new fellows that wanted to rush vessels to the front in a hurry so that they would get advantage of this bounty, those were the vessels that were poorly constructed.
- Q. You do not count the "Duc d'Aumale" in that class, do you, from your knowledge?

Mr. CAMPBELL.—Do not lead your witness in that way.

A. I do not know who she was owned by.

The COURT.—Q. And you do not know who built her?

A. I don't know who built her; no, sir. I know that she looked to me to be a mighty fine vessel when she came alongside the wharf. I remember that I was sitting in my buggy at the time when she came alongside the wharf, and she looked to me to be a pretty fine looking ship.

# Testimony of H. R. Young, for Respondents (in Rebuttal).

H. R. YOUNG, called for the respondents in rebuttal, sworn.

Mr. HENGSTLER.—Q. What is your business?

- A. I am in the stevedoring business and Secretary of the California Stevedoring & Ballast Company.
  - Q. How long have you been in that business?
- A. I have been in the stevedoring business around 30 years.
- Q. What experience have you had in the stowage or discharge of sailing vessels?
- A. Well, I have had considerable experience [385] in stowage and discharging of all kinds of sailing vessels; that is, loading out of here and discharging from all ports of the world.
- Q. Mr. Young, I will show you a copy of the stowage plan of the French bark "Duc d'Aumale," which is in evidence, and I will ask you this question: The "Duc d'Aumale" carried 2,660 tons of cargo, of which 1,900 were in the lower hold and 760 in the between-decks; 2,000 tons were coke and 660 were pig iron; the pig iron was stowed in two piles, one a small pile of 60 tons in the between-decks and 600 tons in the hold, as marked on the stowage plan; the 600 tons of pig iron were placed as follows: they were placed in one body immediately aft of the main hatch, occupying a space about 65 feet long, 29 feet wide at the stern end and 36 feet at the end toward the center of the ship; the height of the pile was about 34/5 feet, and the pile covering an area of more than 2,000 square feet; all the rest of the vessel was filled up with coke. I will ask you whether or not in the experience which you have derived in the stowage of vessels and the discharge of vessels simi-

larly loaded, if you can tell whether this is good stowage.

Mr. CAMPBELL.—Just a moment. Q. Mr. Young, have you had any experience in loading vessels with coke and pig iron?

A. I have had experience in loading them with iron, which is as light as that cargo. That experience came in transferring it from one boat to another, and sending it on to Honolulu; also we loaded for New York considerable scrap iron, and then wool and lighter stuff on top of the iron.

Q. But you have had no experience in loading vessels of this character with a combination of coke and pig iron? A. No.

Mr. CAMPBELL.—We will have the same objection, your Honor. [386]

The COURT.—Very well. Answer the question.

Mr. HENGSTLER.—Q. What is your opinion as to it being good stowage?

A. Well, I do not see any objection to that stowage. I think it is all right. I do not think there is any more weight in that spot than there would be with any other dead weight cargo or homogeneous cargo in the same place.

Q. And how about the 600 tons, would you consider that excessive?

A. No, I do not think so, not in that place there.

Q. Do you know of cases where there was more weight than that of heavy cargo in the hold of a vessel carried as ballast or carried as cargo?

A. Well, I am pretty sure we loaded a lot of steel

ships since the fire from here to New York and we have had considerable scrap iron in them, and I am pretty sure there has been that much weight in that area lots of times—as much as that.

Q. Would that be the natural place in which to put pig iron in that vessel?

A. Well, for this reason; that the man that stowed that ship knew he had just so much pig iron and he wanted to put his pig iron so he could fill up the balance of the ship, and fill her up. In the aft end of the ship the capacity is always less than at the forward end, and he wanted to put that there so as to get as much weight in the after end as possible.

Q. Do you see any reason why stowage of that nature would exercise a greater strain upon the vessel than stowage in other places?

A. Well, I have always taken it for granted that a vessel is built to take that weight there. I do not know anything about the construction of vessels particularly, but practically I have always taken it for granted that it would stand at least that much weight there. I know I have [387] put that much weight in all kinds of ships.

### Cross-examination.

Mr. CAMPBELL.—Q. You never loaded any iron in those French sailing vessels for New York, did you? A. No.

Q. You are not a practical seaman, are you?

A. I am a practical stevedore. I have never been to sea for a living.

Q. I say you are not a practical seaman yourself; you have never been to sea yourself?

A. No, sir; not as a sailor.

The COURT.—Have you any other witnesses?

Mr. HENGSTLER.—No, your Honor.

Mr. CAMPBELL.—I would like to recall Mr. Dickie for a moment.

The COURT.—Very well, recall him.

# Testimony of David W. Dickie, for Libelant, (Recalled).

DAVID W. DICKIE, recalled for libelant.

Mr. CAMPBELL.—Q. Mr. Dickie, you have heard the testimony given this afternoon by Mr. Frear?

A. Yes, sir.

Q. What, if anything, have you to say in answer to it? Is there anything you desire to say?

A. I would emphasize the fact that Mr. Frear, with one of those smiles for which he is famous, evaded the very question which Mr. Campbell asked about the local effect of the shearing force upon the bottom of the vessel. I should like to have had an opportunity to check up these weights, to get the exact difference into the record between my weights which were taken from the formulas upon which these ships were designed, and the actual weights of the ships as given by the French shipbuilders. [388]

Q. What can you say of his criticism of your buoyancy curves?

A. Mr. Frear gave a very good description of my

work there, with the exception that he said that these things did not appear to him to be right. There is one fact which I wish to bring out, and that is that if these calculations were not correct the line of shearing force, which is the heavy black line, and which begins at one end of the ship as represented by the diagram, would not come out at the other end if the calculations were not correct. If there is any error in the calculations the shearing force curve would not come out at the end of the base line, the end of said base line representing the length of the ship on the waterline. With regard to the bowsprit which Mr. Frear mentioned, it is quite easy to see that the very end of a ship at the last outermost point has no weight at all. You will notice that my curve of weight, as representing the weight of the ship, has an ordinate at the end. The meaning of this ordinate at the end is that I have taken the weight of the bowsprit and the overhang of the bow and the curve, so that these weights are included in the weight of ship curve, which is plainly marked on the drawing as weight of ship. Likewise with the stern, the overhang has been included and producing an ordinate on the weights of the ship curve at the after end.

Q. Will you mark the stern ordinate "Stern" and the bowsprit ordinate "Bowsprit"?

A. I have indicated on the drawing that the ordinate includes the weight of the bowsprit and the bow weight; and the ordinate at the stern includes the overhang of the stern weight; otherwise the weight of the ship curve would come down to a zero point

at the end of the base line at each end. If Mr. Frear [389] had checked up my buoyancy curve and my weight curve he would have found that my buoyancy curve is very close to the weight curve, there being a slight difference caused by my buoyancy curve being figured by Tchebyscheff's rule; the weight curve was figured by Amsler's Integrator. The difference between these two curves is caused by the coefficient of the integrator, and this coefficient has been taken care of in constructing the shearing force curve. The entire cargo of the ship is resting on the bottom of the ship. The particular shearing force given here applies to the ship as a whole, but as all of the strains have to be taken by the bottom of the ship, due to the fact that the cargo rests on the bottom, I illustrated the strain on the bottom by means of this shearing force curve. The quantities of shearing force were purposely omitted as this curve is for a ship of the type of the "Duc d'Aumale" and is not an actual curve for the "Duc d'Aumale." The difference in weight between the "Duc d'Aumale" as given by the French builders and the English builders, is as follows: the French builders have given the weight of the ship as 1396.-615 French tons; transferring that into English tons gives about 1415 tons, as near as I can read it on the slide rule. You will see that this is extremely close to the weight of the ship as I have given it in my evidence before. The percentage of error, as compared with the total weight of a ship and her cargo, is extremely small.

- Q. Is there anything that Mr. Frear has said that in any way changes your opinion regarding the shearing force produced by the stowage of those 600 tons?
- A. Nothing Mr. Frear has said changes my opinion about the [390] shearing force produced on the bottom of the vessel by the location of the 600 tons of pig iron in one body. Mr. Frear illustrated the shearing force by two pieces of cardboard. I wish to illustrate wherein the shearing force as applied to the "Duc d'Aumale" does not agree with the testimony which he gave. We will assume that these two pieces of paper which I have, the upper one representing the deck and the lower one representing the bottom of the ship, the particular shearing force which Mr. Frear was trying to illustrate was the shearing force of the ship as a whole; whereas, the shearing force that I have discovered as causing the damage in this ship, in my opinion, is caused by the cargo of the ship producing a shearing force in the bottom of the ship, locally at one point, or as the case here, in three points, and did not affect the deck in any way. This cargo damage, as given in the evidence, in my opinion, bears out the calculations that I have made.
- Q. In your judgment, Mr. Dickie, would it have required much of a shearing force to have opened the butt-seams and caused the rivets to have leaked?
- A. In my opinion it would not require an extreme shearing force to do that. The shearing force that would cause the butts to leak and open the seams

and give trouble with the rivets is well within the safe shearing force which the structure of the ship as a whole would stand with perfect safety.

### Cross-examination.

Mr. HENGSTLER.—Q. Mr. Dickie, is this a new theory of yours, this theory of shearing force?

A. No, sir, that theory is as old as the subject of naval architecture. [391]

Q. If some celebrated writers on navel architecture hardly mention shearing force, but have whole chapters on bending force, and the influence of bending forces upon vessels, would not that indicate that the shearing force is a negligible quantity in accounting for damage to the plating?

A. Not at all.

Q. What is that fact due to, that you do not find anything on shearing force in the technical works, but that they are full of bending forces?

A. You will find a great deal about shearing forces in technical works if you look in the right technical works to find them. The reason that the bending moment has so much attention paid to it is that the whole early ships were dependent upon calculations for the bending moment to govern their early design. The early naval architects, like Scott Russell and those famous men, designed the ships and figured out the bending moment on three conditions; one on the wave, one on the crest of the wave, and one in still water. This gave them a figure which became a matter of data. They then tried all kinds of different figures for this bending moment. They

kept putting on more and more bending moment on the ship until they got to the point where they began to fail. That gave them what we call a safe bending moment for ships in the North Atlantic, where you find the worst conditions you have to contend with. You will notice that the Lloyd line tables compel you to draw less water and have more freehold in the winter in the North Atlantic than in any other part of the world. This, however, is independent from the local shearing force which caused the trouble in this [392] vessel, in my opinion.

- Q. Oh, you know what caused the trouble with this vessel, do you? Do you know that that vessel was lying on shore for three months half submerged? A. I have been so informed.
- Q. Nevertheless, you think the pig iron is what opened the butts?
- A. I think the trouble in this vessel is what caused her to put ashore. If she had been properly loaded when she left she would not have had to put ashore at all.
  - Q. That is from what you were told?
  - A. That is my judgment.
  - Q. That is from what you were told, is it not?
- A. Well, that is from reading the evidence in the case, as given by—
- Q. (Intg.) Did you read the whole evidence in the case? A. No, I mean only the reports.
- Q. Do you know the work of White on Naval Architecture? A. Yes.
  - Q. That is a very authoritative work, is it not?

- A. A very distinguished man.
- Q. Did you hear the passage that I read to Mr. Frear? A. Yes.
  - Q. You do not agree with that?
- A. I do agree with it. Mr. White there is dealing with a shearing force on the structure of a ship as a whole and not with the application of that shearing force to a particular local member of the ship.
- Q. But Mr. White also states, and states it all the way through, does he not, that the shearing force does not exercise upon the horizontal planes of the ship but it finds its exerside [393] against what would be the web of the girder; he illustrates the whole proposition, does he not, by comparing a ship with a hollow girder, calls her a hollow girder, and shows how the bending strains act upon the flange of the girder, the horizontal portions of the girder, and how they spend their force on that, and how the shearing forces spend their force solely—not solely, but chiefly, as Mr. Frear said—99 per cent on the vertical part of the girder. Mr. White is full of that from the first page to the last, is he not, and every other naval architect?
- A. Mr. White is perfectly correct in everything he stated, but I wish to make myself clear: Mr. White is dealing with the total shearing force of the ship as affects the total structure of the ship as a whole. Now, after we have disposed of the effect of this shearing force on the total structure of the ship as a whole we begin to look for the effect upon local parts of the ship of the entire loading of the

The fact must be borne in mind that we have the bottom of the ship, for illustration, as a plane upon which is loaded above and an unequally distributed cargo, and which we have below a gradual or the same pressure per square foot load supporting the weight of the cargo and the whole ship. This sets up on the bottom of the ship, independent of the sides, a shearing force due to the excess of weight at one point and the excess of buoyancy at another point to support that weight. This shearfing force is transferred through the frames and through the keelsons and the stringers to the other structural parts of the ship. It is transferred through the frames and the floor out to the outside parts of the ship. It is transferred through the [394] keelson fore and aft to the other parts of the ship, the bulkheads and things of that kind. you have a local weight affecting the bottom of the ship in the effort of straining and transferring that strain out to the outside of the ship, which is put there for the purpose of taking the whole shearing force, as Mr. Frear illustrates, it is in the act of transferring the shearing strain from this local point to the sides of the ship that the ship has failed in this particular case. You have a shearing force right along the center of the ship here due to the loading of the cargo. This shearing force had to be taken care of somewhere. It was transferred by means of the frame out to the sides of the ship, and it was in that transfer that the extra strain was thrown on the plating and the framing in that ship.

- Q. Supposing this pile were raised from the bottom of the ship to between decks, within vertical parallels, just raised up a story, what would the shearing strain be in that case?
- A. If this cargo were raised up to the between decks, the weight of the cargo would be transferred—
  - Q. (Intg.) I mean just the pig iron part?
- A. Yes, the pig iron part; the weight of the pig iron cargo would be transferred down through the stanchions which support the beams in the center to the bottom of the ship again; that is to say, the weight as represented by one-half the width of the ship would be transferred down through the stanchions and one-half of the load would be transferred to the sides of the ship direct. In that case you would not have as big a strain on the bottom as you would if the cargo were loaded on the bottom because one-half of the load would be transferred [395] only down through the stanchions and the other half would be transferred directly to the sides of the ship which are prepared to take the shearing force.
- Q. How would it be if you put that pile on the weather-deck, within the same vertical lines?
- A. Then the stanchions from the weather-deck down to the between-decks, combined with the stanchions from the between-decks down to the hold would make the condition just exactly as I have stated it for the between-decks.
  - Q. Would the strain in that case upon the bottom

(Testimony of David W. Dickie.) plating be equal, or less?

- A. I think the strain would be less in that case on the bottom plating, and on the bottom plating and about equal to the amount that you would transfer over to the sides of the ship direct by means of the beams and beam-arms.
- Q. Have you attempted to construct curves corresponding to those positions, first when it is in the bottom and then in the between-decks and then on the weather?
  - A. No, I did not have time to do that.
- Q. I think if you will do that, Mr. Dickie, you will find you will get the same strain.
- A. This curve has nothing to do with the strains on the ship in the sense that you mean. This curve is constructed by means of certain loads and certain weights. After we get the curve constructed, then we analyze to see how these weights and these forces are to be taken care of.

Mr. HENGSTLER.—Well, I will leave this examination now. If your Honor please, there is a personal explanation that I would like to make at this time. I have been criticised, and it seems to me with some effect upon your Honor, for not holding [396] to my original agreement. Nothing has been further from my mind, and it would really grieve me personally very deeply if I thought your Honor had such an idea.

The COURT.—Oh, there was nothing of that kind intended. I simply stated my understanding, that you would probably have some witnesses whose tes-

(Testimony of David W. Dickie.) timony you might want to take abroad.

Mr. HENGSTLER.—The whole testimony that was taken was to me a surprise, if your Honor please. Right or wrong, I had understood for a year and a half that the case was finished and ready for argument. It was a surprise to me that expert witnesses were called. I wanted to reserve the right most strongly to rebut the testimony of those expert witnesses in everything in which it was material. I came to the conclusion that the stowage affected me and was worth while rebutting—

Mr. CAMPBELL.—Mr. Hengstler, pardon me for a moment; how could you have come to the opinion that we were not going to put in any evidence at all?

Mr. PAGE.—At that time we had not a word of evidence in the case. Did you expect us to let it go by default?

Mr. HENGSTLER.—Well, I know, but the way the case began—

The COURT.—Just a moment. That is all the testimony you have, is it?

Mr. HENGSTLER.—Yes, that is all the testimony.

Mr. PAGE.—Yes, your Honor, that is all.

The COURT.—Let it be submitted.

[Endorsed]: Filed Feb. 6, 1912. Jas. P. Brown, Clerk. By Francis Krull, Deputy Clerk. [397] (Title of Court and Cause, and Number.)

Opinion Ordering Decree in Favor of Libelants, etc. (13,959.)

PAGE, McCUTCHEN & KNIGHT, Proctors for Libellant.

ANDROS & HENGSTLER, Proctors for Claimant.

MEMORANDUM BY BEAN, D. J.

The facts in this case are as follows: On August 19, 1907, the French bark "Duc d'Aumale," a threemasted steel vessel of 1,944 tons register, was chartered by her owners to Meyer, Wilson & Co., to carry a cargo of coke and pig iron from Rotterdam to San Francisco. After she had been examined by experts appointed by the French Consul at Rotterdam and by a representative of the Bureau Veritas and the agents of the owners, and by all of them pronounced in every respect seaworthy, she was loaded with 2,015 tons of coke and 660 tons of pig iron. Six hundred tons of the pig iron was stowed in the lower hold between the after part of the main and the forward part of the after hatch in one body, 63 feet long, 34/5 feet high, 36 feet wide at one end, and 291/2 feet wide at the other. The vessel left Rotterdam on September 19th, and was towed to Brest, where she arrived on the 22d. She sailed from Brest on the 24th for San Francisco. On the afternoon of the 28th and before she had experienced any unusual or extraordinary sea or weather she began leaking through the hull so badly as to make it necessary to use the pumps for forty minutes each day thereafter to free the ship. She did not put into a port of

refuge for repairs but continued on her voyage, the pumps being worked every day until the 22d of November, when she encountered a storm, and, it being impossible to operate the pumps, and the leak increasing, she was put before the wind for the Falkland Islands and was beached at the Roy Cove on November 22d, where she remained until [398] the 13th day of February following. She was then towed to Port Stanley, taken from there to Montevideo and from Montevideo to Buenos Ayres, where she arrived on the 5th of May. The cargo was discharged and she was placed in drydock at Buenos Ayres for repairs. Upon examination, it was ascertained that one rivet was gone from a point about one meter forward of the mizzen mast and one foot from the keel, and that two or three hundred other rivets were loose and leaking. Her plates near the stern were bent and at other parts of the ship the cement was broken in the butt ends of several of the plates. After being repaired at Buenos Ayers her cargo was again taken aboard, the pig iron being more generally distributed in the hold, and on July 6th she sailed for San Francisco, arriving at the latter place on the 19th of November. Her cargo was badly damaged from sea water and her charterers refused to pay the freight, whereupon the owners commenced proceedings to enforce a lien therefor, and the charterers libeled the vessel on a claim for damage to the cargo. The two actions have been consolidated for the purposes of trial and were tried as one.

The principal issues raised by the pleadings are, first, the seaworthiness of the ship as to hull when

she left Rotterdam, and, second, her seaworthiness as to stowage of cargo when she sailed.

Without referring to the testimony in detail or discussing it at length, it is sufficient to say that I am clearly of the opinion that the vessel was unseaworthy at the commencement of the voyage either because of a defective hull or the improper stowage of her cargo or both. In no other way can the leak which occurred on the 28th of September and her subsequent condition near the Falkland Islands be satisfactorily accounted for. All the witnesses testify that the weather she experienced on the voyage was not unusual or extraordinary but such as was reasonably to be expected on a voyage [399] of that kind.

Where a vessel soon after leaving port becomes leaky without stress of weather or other adequate cause, there is a presumption of fact, or rather an inference from the fact of leakage, that she was unseaworthy at the time she sailed. (The Warren Adams, 74 Fed. 413; The Arctic Bird, 109 Fed. 167; Steamship Wellsesley vs. Hooper, 185 Fed. 733.) But it is argued that this presumption or inference is overcome in this case by proof that the "Duc d'Aumale" was inspected before sailing by competent experts and pronounced seaworthy. I do not think such evidence is conclusive. The inspection was general, largely visual, and not particularly of the parts which proved defective. The testimony of the experts that they made an inspection and found the ship in good condition is, of course, persuasive and often satisfactory evidence to show that the vessel was in fact

seaworthy at the time she sailed, but it is by no means conclusive. If a vessel immediately after sailing should make water rapidly through a hole in her hull in a smooth sea and without adequate cause for the leak being shown, the conclusion would be irresistible that she was defective at the time she sailed, notwithstanding she may have been inspected and pronounced seaworthy by competent and skilled survey-(Carolina Portland Cement Co. vs. Anderson, 186 Fed. 145.) In such case the necessary conclusion would be that the inspectors had overlooked the de-The question is always one of fact to be determined from the circumstances of each case. Court must, after considering all the evidence and the legitimate inferences and deductions to be drawn therefrom, determine as a question of fact whether the vessel was seaworthy or not. From the evidence in this case my opinion is that the vessel in question was not seaworthy in her hull at the time she sailed and that the inspectors did not observe the faulty rivets or defective butts through which the leak occurred. But if [400] I am mistaken in this view, I am forced to the conclusion, in order to account for the leak, that the stowage of 600 tons of pig iron in one body in the hold of the vessel, was, as testified to by many experts, improper stowage and produced an unusual sheering strain on the bottom of the vessel, where it was subsequently ascertained the leak occurred, which loosened the rivets and butt ends and caused to vessel to take in sea water. This conclusion finds support in the judgment of the independent surveyors at Buenos Ayres who surveyed the vessel in drydock and advised a more general distribution of the iron over the ship's bottom, which was done in reloading, and before she sailed for San Francisco.

It is claimed, however, that the ship and her owners are exempt from liability under the third section of the Harter Act because the master proceeded on the voyage after discovering the leak on September 28th and did not put into a harbor of refuge for repairs. But the Harter Act does not exempt a vessel or her owner from liability for damages resulting from unseaworthiness at the commencement of the voyage either in hull or from improper stowage of cargo, and this notwithstanding the vessel has been subjected to a general inspection and pronounced seaworthy by competent experts. (The Carib Prince, 170 U. S. 655; The Silvia, 171 U. S. 462; The Sandfield, 92 Fed. 663; Corsar v. Spreckels, 141 Fed. 260; The Ninfa, 156 Fed. 512.)

It follows that the libellants, Meyer, Wilson & Company, are entitled to recover for damaged cargo. The usual reference will be made to ascertain the amount thereof.

Findings and judgment may be prepared in accordance with this memorandum, for my signature or that of the presiding judge.

April 12, 1912.

R. S. BEAN, Judge. [401]

Let a decree be entered in accordance with directions of within opinion.

April 15, 1912.

JOHN J. DE HAVEN, Judge. [Endorsed]: Filed April 15, 1912. Jas. P. Brown, Clerk. By Francis Krull, Deputy Clerk. [402]

(Title of Court and Cause, and Numbers.)

### Interlocutory Decree.

The above-entitled causes having been consolidated and the Honorable D. J. Bean, Judge of the above-entitled court, after due and regular trial, having rendered his decision therein, holding Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, partners under the style of Meyer, Wilson & Co., to be entitled to recover judgment for damages to cargo, and the Honorable John J. De Haven, Judges of the above-entitled court, having thereafter, on the 15th day of April, 1912, ordered that a decree be entered in accordance with said decision, and directing that an order be entered referring said cause to a commissioner of this court to assess the damages so allowed;

NOW, THEREFORE, IT IS HEREBY OR-DERED, ADJUDGED AND DECREED in accordance with said decision that Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, partners under the style of Meyer, Wilson & Co., do have, and recover, judgment in the above-entitled cause for damage to cargo as in said decision awarded;

IT IS FURTHER ORDERED that said cause be referred to Francis *H*. Krull Commissioner of this court, to hear testimony and assess the said damages in accordance with said decision, and thereafter make

due report of same to this court.

Entered this 18 day of August, 1913.

M. T. DOOLING,

Judge.

[Endorsed]: Filed Aug. 18, 1913. W. B. Maling, Clerk. By Francis Krull, Deputy Clerk.

Entered in Vol. 5, Judg. and Decrees, at page 121. [403]

(Title of Court and Cause, and Numbers.)

Report of United States Commissioner on Reference to Ascertain and Report Amount Due Libelants.

To the Honorable, the United States District Court for the Northern District of California, First Division:

Pursuant to the order made herein referring the above-entitled cases as consolidated, to me as United States Commissioner, to hear the testimony and assess the damages in accordance with the decision rendered April 12, 1912, I have to report that I was attended by the proctors for the respective parties, and the proceedings accompanying this report and made a part hereof, were had as therein set forth.

From the evidence adduced before me it appears that the measure of the damages which will compensate Meyer, Wilson & Co., for their loss, will be the difference between the net amount they would have received for their cargo had there [404] been no accident, and the amount which they did receive as net proceeds from the sale of the damaged cargo, together with interest on the net amount which would

have been received had there been no accident, for the period of eight months, the approximate period the ship was delayed because of the accident; also interest from November 19, 1908, up to and including the date of this report on the amount due on November 19, 1908, the date the ship arrived and which date is taken as the date of settlement, for the purpose of calculating the interest. The freight money due the ship or owners, was withheld by Meyer, Wilson & Co., as a setoff to any damage, and being so withheld, I am of opinion, that they are only entitled to interest from the date of the ship's arrival in San Francisco, on any balance in their favor. Meyer, Wilson & Co., are also entitled to certain items of expenditure made on account of the ship, and also certain fees allowed them under the terms of their contract as agents of the ship.

It appears there was shipped on board the "Duc d'Aumale" on account of which damage is claimed the following cargo:

349

COKE: 2015,000 kilos or 1983–2240– tons, as evidenced by bill of lading No. 3.

If said cargo of coke had been delivered at San Francisco, in due course and undamaged, it would have had a gross market value of

\$29,247.34

vs. Hermann L. E. Meyer et al.	469
The duty would have	
been\$1,763.80	
The freight would have	
been13,802.76	15,566.56
The net value would	
have been	\$13,680.78
The interest at the rate	
of 7% per annum on	
the net value of the	
cargo for the period	
of eight months, is	. 638.44
Total carried forward	.\$14,319.22
[405]	
Total brought for-	
ward as the net	
value of cargo	
of coke on ar-	
rival of ship	
plus interest	·
thereon	.\$14,319.22
The coke sold at auc-	
tion for the	
gross sum of \$14,723.09	
The expenses of the	
sale were \$388.00	
The duty paid was1659.04 2,047.04	

Net amount realized

from sale....

\$12,676.05

The amount due Meyer, Wilson & Co. as of Nov. 19, 1908......

\$ 1,643.17

It is contended that \$348 out of the items for expenses incident to the auction sale of the coke, should not be allowed, I am, however, of the opinion, that all expenses incurred therein were proper and necessary for the sale of the damaged coke. An auction sale fairly conducted being a proper method of determining the value of the damaged coke, the necessary expense incident to the sale, is an item of damage.

It is further contended that a deduction made from the weight of the coke as sold on account of moisture, was excessive. This deduction it appears was made upon the report of competent chemists, and there is no evidence that this allowance was not proper, other than a calculation based on weights whose accuracy is not sufficiently established. It further appears that a satisfactory determination of the moisture in the coke was necessary to bring about a sale, and the price obtained was based upon this determination.

CLARENCE PIG IRON: 263=540/2240 tons shipped as evidenced by bill of lading No. 1.

If said cargo of pig iron had been delivered at San Francisco in due course and undamaged, its gross market value would have been.....

\$7,449.71

The duty paid would have been	
\$1,052,96	
The freight would have been 1,421.50	
The State tolls would have been	
	87.61
The net value would have been \$4,9	62.10
The interest thereon for the	
period of eight months at the	
rate of 7% per annum is 2	31.56
Total carried forward\$5,1	93.66
[406]	
Total brought for-	
ward as the net	
value of cargo	
on arrival of	
ship plus inter-	
est thereon \$5,1	93.66
Meyer, Wilson & Co.,	
received as the	
proceeds of sale	
of said pig iron. \$6,397.50	
The duty paid was\$1,052.96	
The State tolls 13.15 1,066.11	
Net proceeds of	
sale \$5,331.39	
Less net value of	
cargo on arrival	
of ship plus inter-	
est for delay 5,193.66	

.

Amount due the ship	
or her owners \$137.73	
SILICIOUS PIG IRON: 400-2140/2 shipped, as evidenced by bill of lading	
If said cargo of pig iron had been deliv-	5 210. 21
ered at San Francisco, in due course	
and undamaged, it would have had a	
gross market value of	\$11,046.32
The duty would have	
been\$1603.82	
The freight would	
have been 2165.16	
The State tolls	
would have been 20.05	3,789.03
The net value would	
have been	\$7,257.29
The interest at the	
rate of 7% per	
annum on the net	
value of this cargo	
for the period of	999 GT
eight months is	338.67
Total net value of	
cargo on arrival	
of ship and inter-	
est	\$ 7,595.96

Meyer, Wilson &	ž
Co., received as	
the proceeds of	
sale of said pig	
	\$10,497.64
The duty paid	,
was\$1,603.82	
The State tolls were. 20.05	1,623.87
Net proceeds of	φ0.050.55
sale	\$8,873.77
Less net value of	
cargo on arrival	
of ship plus inter-	7 505 00
est for delay	7,595.96
Amount due ship or	
her owners —	\$1,277.81
The fellowing items aloined	
The following items claimed	by Meyer, wilson &
Co., are allowed:	t
Agency fee as provided in char	
Commission on freight earned	•
in charter party, being	
\$16,560.75	
Disbursements made on account	
For cable relative to ship's dev	
For extra premium occasioned	_
deviation, and provided for	
party	
Cable relative to general average	ge 23.86
Total	\$1197.62

The item for cable relative to auction sale and the item for survey of ship, are disallowed. [407]

Proctor for Meyer, Wilson & Co., at the close of the testimony stated that he would make further claim for 1,000 pounds paid for a salvage service on account of the cargo damaged. No proof was offered as to this claim and no finding is therefore made thereon.

\$1,643.17
·
1,197.62
\$2,840.79
1,415.54
\$1,425.25
<b>+</b> /
640.17
\$2,065.42

I do therefore find and assess the damages due Meyer, Wilson & Co., to be the sum of Two thousand sixty-five dollars and forty-two cents.

All of which is respectfully submitted.

Dated, April 19, 1915.

[Seal] FRANCIS KRULL,

United States Commissioner for the Northern District of California, at San Francisco.

[Endorsed]: Filed Mar. 23, 1916. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk.

Presented in open court and filed by order thereof May 6, 1916. W. B. Maling, Clerk. By Lyle S. Morris, Deputy Clerk. [408]

(Title of Court and Cause, and Number.) (13,941.)

#### Final Decree.

The above-entitled cause for the recovery of freight on the cargo of the said French barque "Duc d'Aumale" having been consolidated with that certain and separate cause entitled "Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, partners under the style of Meyer, Wilson & Co., Libelants, vs. The French Barque 'Duc d'Aumale,' etc., Respondent, Compagnie Maritime Francaise, Claimant," and numbered in the records of the above-entitled court as No. 13,959, for the purposes of trial and reference to a Court Commissioner to ascertain damages, and consolidated for no other purpose or purposes; and the said causes so consolidated and not

otherwise having come on regularly for trial; and the property of said libelant's right to freight on the said cargo in the said above-entitled action not being denied or contested; and the defense to said claim for freight being in alleged setoff for damage to said cargo in an amount greater than the sum alleged to be due for freight; and the Court having rendered its opinion and decision holding said claimants above named to be entitled to damages for injuries to said cargo; and that there should be a reference to ascertain the amount of said damages; and having ordered that a decree be entered in accordance with the direction of said opinion; and the Court having thereafter ordered that said cause be referred to Francis H. Krull, Commissioner of this court, to hear testimony and thereafter make due report of the same to this Court in accordance with said decision; and a hearing having been duly had before said Commissioner; and said Commissioner having on the 19th day of April, 1915, found the freight on the said cargo to [409] be the aggregate sum of seventeen thousand three hundred eighty-nine and 42/100 dollars \$17,389.42), but having found the cargo damages due to said claimants under the said decision to be a sum in excess of the said sum constituting the said freight; and exceptions having been taken to the Commissioner's said report, and the said exceptions having come on for hearing before the above-entitled court, and the Court having on the 29th day of January, 1917, filed its order herein overruling said exceptions and confirming said report; and

It thus appearing to the Court that the sum of

money, to wit, the sum of seventeen thousand three hundred eighty-nine and 42/100 dollars (\$17,389.42), constituting the freight payable to said libelant by said claimants on the said cargo is more than offset by the damages for cargo injuries found due to said claimants from said libelants in said above-entitled action;

NOW, THEREFORE, IT IS HEREBY ORDERED, ADJUDGED AND DECREED that the said libel is hereby dismissed and that claimants do have and recover their costs incurred herein to be hereafter taxed.

Dated, San Francisco, California, February 26th, 1917.

M. T. DOOLING, Judge.

[Endorsed]: Filed Feb. 26, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk.

Entered in Vol. 7, Judg. and Decrees, at page 141. [410]

(Title of Court and Cause, and Numbers.)

#### Final Decree.

The above-entitled causes having been consolidated and having come on regularly for hearing before the above-entitled court, and the said Court having rendered its opinion and decision herein holding Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, partners under the style of Meyer, Wilson & Co., to be entitled to recover judgment for damages to cargo and

that there should be a reference to ascertain the amount of said damages, and having ordered that a decree be entered in accordance with the directions of said opinion and decision; and the Court having thereafter accordingly entered its interlocutory decree herein ordering, adjudging and decreeing that the said Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, partners under the style of Meyer, Wilson & Co., do have and recover judgment in this cause for damage to cargo as in said opinion and decision awarded, and having ordered that said cause be referred to Francis H. Krull, Commissioner of this court, to hear testimony and assess the said damages in accordance with said decision and thereafter make due report of the same to this Court; and a hearing having been duly had before said Commissioner, and said Commissioner having, on the 19th day of April, 1915, found and assessed the damages of the said above-named partners to be the sum of one thousand, four hundred twenty-five and 25/100 (1,425.25) dollars, together with interest thereon from November 19, 1908, to April 19, 1915, in the sum of six hundred forty and 17/100 (640.17) dollars a total of two thousand and sixty-five and 42/100 (2,065.42) dollars; and exceptions having been taken to the Commissioner's said report, and the said [411] exceptions having duly come on for hearing before the above-entitled Court, and the Court having, on the 29th day of January, 1917, filed its order herein overruling said exceptions and confirming said report and ordering that a decree be entered accordingly in

favor of the said Herman L. E. Méyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, partners under the style of Meyer, Wilson & Co., for two thousand two hundred forty-two and 72/100 (2,242.72) dollars, being for the sum of one thousand four hundred twenty-five and 25/100 (1,425.25) dollars, found to be due them on November 19, 1908, with interest thereon from that date to said January 29, 1917, amounting to eight hundred seventeen and 47/100 (817.47) dollars:

NOW, THEREFORE, IT IS HEREBY ORDERED, ADJUDGED AND DECREED that said libelants, Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, partners under the style of Meyer, Wilson & Co., do have and recover from Compagnie Maritime Française the sum of two thousand two hundred forty-two and 72/100 (2,242.72) dollars, together with interest thereon from the date of this decree at the rate of seven (7) per cent. per annum until paid, together with the costs of said Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, partners under the style of Meyer, Wilson & Co., herein incurred, to be hereafter taxed and entered herein. in the sum of three hundred two and 50/100 (302.50) dollars.

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that if this decree shall remain unsatisfied for ten days after entry thereof and notice to proctors for the said Compagnie Maritime Francaise, the stipulators for costs and value on the

part of said Compagnie Maritime Francaise, to wit, Fidelity and Deposit Company of Maryland, shall unless an appeal be taken from this decree within the time prescribed by law, and the rules and practice of this Court, cause [412] the engagement of their stipulations to be performed, or show cause within four days why execution should not issue against them, their lands, goods and chattels, according to their stipulation, to enforce the satisfaction of this decree, and if no cause be shown within the time limited, due service having been made on the proctors for the said Compagnie Maritime Francaise, a summary decree herein shall be rendered against the said stipulators on their stipulation and the execution issued accordingly.

Dated February 8, 1917.

M. T. DOOLING,
Judge.

[Endorsed]: Filed Feb. 8, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk.

Entered in Vol. 7, Judg. and Decrees, at page 130. [413]

(Title of Court and Cause, and Number.) (13,941.)

### Notice of Appeal.

Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quale, Partners Under the Style of Meyer, Wilson & Co. (Claimants), and McCutchen, Olney & Willard, Their Proctors, and to W. B. Maling,

Clerk of the United States District Court for the Northern District of California, First Division.

You and each of you, will please take notice that the libelants in the above-entitled cause hereby appeal to the United States Circuit Court of Appeals for the Ninth Circuit from the final decree of the District Court of the United States for the Northern District of California, sitting in admiralty, made and entered in said cause on this 26th day of February, 1917.

Dated March 15, 1917.

# ANDROS & HENGSTLER, GOLDEN W. BELL,

Proctors for Libelants.

[Endorsed]: Filed Mar. 16, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk. [414]

(Title of Court and Cause, and Number.) (13,959.)

#### Notice of Appeal.

To Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quaile, Partners Under the Style of Meyer, Wilson & Co. (Libelants), and McCutchen, Olney & Willard, Their Proctors, and to W. B. Maling, Clerk of the United States District Court for the Northern District of California, First Division,

You and each of you will please take notice that

the Claimants in the above-entitled cause hereby appeal to the United States Circuit Court of Appeals for the Ninth Circuit from the final decree of the District Court of the United States for the Northern District of California, sitting in admiralty, made and entered in said cause on this 8th day of February, 1917.

Dated March 15, 1917.

ANDROS & HENGSTLER,
GOLDEN W. BELL,
Proctors for Claimant.

[Endorsed]: Filed Mar. 16, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk. [415]

(Title of Court and Causes, and Numbers.)

#### Assignment of Errors.

Compagnie Maritime Francaise, as libelant in suit No. 13,941, and claimant of the French barque "Duc d'Aumale" in suit No. 13,959, assigns as error in the conclusions, findings, proceedings and decrees of the District Court the following:

- 1. The District Court erred in ordering and entering a decree dismissing the libel, with costs to claimants in suit No. 13,941.
- 2. The District Court erred in ordering and entering a decree in favor of libelants, with interest and costs, in suit No. 13,959.
- 3. The District Court erred in not ordering and entering, in suit No. 13,941, a decree in favor of libelant for the sum of seventeen thousand three hundred eighty-nine and 42/100 dollars (\$17,389.42), with in-

terest thereon at the rate of seven (7) per centum per annum from the 1st day of December, 1908, and costs of suit.

- 4. The District Court erred in not ordering and entering, in suit No. 13,959, a decree dismissing the libel therein and in favor of claimant for its costs.
- 5. The District Court erred in holding and deciding that the claimants of the cargo in suit No. 13,941 are entitled to damages for injuries to the said cargo.
- 6. The District Court erred in finding and concluding that the said bark "Duc d'Aumale" was unseaworthy at the commencement of her voyage either because of a defective hull or the improper stowage of her cargo or both. [416]
- 7. The District Court erred in not finding and deciding that the said barque "Duc d'Aumale" was seaworthy at the commencement of her voyage in hull.
- 8. The District Court erred in not finding and concluding that the cargo of the said barque, at the commencement of her voyage, was properly stowed.
- 9. The District Court erred in finding and concluding that the leak which occurred on the 28th day of September, 1907, and the subsequent condition of the barque near the Falkland Islands, could be satisfactorily accounted for only on the presumption that the vessel was unseaworthy at the commencement of the voyage either because of a defective hull or the improper stowage of her cargo or both.
- 10. The Court erred in finding and concluding that the inspection of the barque before sailing by competent experts was insufficient to overcome the

presumption of fact, from the fact of leakage that the barque was unseaworthy at the time she sailed.

- 11. The Court erred in finding and concluding that the alleged presumption of fact, drawn from the fact of leakage, applies to the facts and circumstances disclosed by the evidence in the above-entitled cases.
- 12. The Court erred in finding and concluding that the vessel was not seaworthy in her hull at the time she sailed.
- 13. The Court erred in finding and concluding that the stowage of 600 tons of pig iron in one body in the hold of the vessel was improper stowage, in producing an unusual sheering strain on the bottom of the vessel, or otherwise.
- 14. The Court erred in not deciding that the vessel and [417] her owners are exempted from liability for all damages to the cargo in this case by the Act of Congress approved February 13, 1893, and commonly called the Harter Act.
- 15. The Court erred in holding and deciding that the Harter Act does not exempt the claimants of the barque from liability for damages resulting from unseaworthiness at the commencement of the voyage, notwithstanding the vessel had been subjected to a general inspection and pronounced seaworthy by competent experts.
- 16. The Court erred in holding and deciding that the Harter Act did not constitute a legal defense to the claim and suit of the claimants of the cargo against the claimants of the barque.

[Endorsed]: Filed May 9, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk. [418]

(Title of Court and Cause, and Number.) (13,941.)

#### Notice of Filing Cost Bond on Appeal.

To Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quaile, Partners Under the Style of Meyer, Wilson & Co. (Libelants), and McCutchen, Olney & Willard, Their Proctors.

You and each of you will please take notice that a cost bond on appeal herein has been this day filed in the office of the Clerk of the District Court of the United States for the Northern District of California, and that the said bond is in the sum of two hundred and fifty (250) dollars with the National Surety Company, a Corporation, thereon as surety.

Dated San Francisco, California, March 16, 1917.

ANDROS & HENGSTLER, GOLDEN W. BELL,

Proctors for Libelant and Appellant.

[Endorsed]: Filed Mar. 17, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk. [419]

(Title of Court and Cause, and Number.) (13,959.)

### Notice of Filing Cost Bond on Appeal.

To Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quaile, Partners Under the Style of Meyer, Wilson & Co. (Libelants), and McCutchen, Olney & Willard, Their Proctors.

You and each of you will please take notice that a cost bond on appeal herein has been this day filed in the office of the Clerk of the District Court of the United States for the Northern District of California, and that the said bond is in the sum of two hundred and fifty (250) dollars with the National Surety Company, a Corporation, thereon as surety.

Dated San Francisco, California, March 16, 1917.

# ANDROS & HENGSTLER, GOLDEN W. BELL,

Proctors for Claimant and Appellant.

[Endorsed]: Filed Mar. 17, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk. [420]

(Title of Court and Causes, and Numbers.)

#### Stipulation Consolidating Causes.

IT IS HEREBY STIPULATED by and between the respective parties hereto that the records and files of the above-entitled causes may be consolidated for the purposes of preparing an Apostles on Appeal in the said causes and that the said Apostles on Appeal when so prepared may be used in the appeal of each said causes to the United States Circuit Court of Appeals for the Ninth Circuit.

Dated San Francisco, California, March —, 1917.

IRA A. CAMPBELL,

McCUTCHEN, OLNEY & WILLARD,

Proctors for Libelants in Case No. 13,959, and Claimand in Case No. 31,941.

### ANDROS & HENGSTLER, GOLDEN W. BELL,

Proctors for Libelants in Case No. 13,941, and Claimant in Case No. 13,959.

[Endorsed]: Filed Mar. 16, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk. [421]

(Title of Court and Causes, and Numbers.)

Stipulation and Order Regarding Original Exhibits and Documents Written in a Foreign Language.

IT IS HEREBY STIPULATED BY AND BETWEEN the respective parties hereto that in the preparation of the Apostles on Appeal in the above-entitled causes, consolidated in accordance with the stipulation on file herein, that all testimony, depositions, and documents in a language other than English shall be omitted, provided however, that any translations of such testimony, depositions or documents as have heretofore been made for the use of the court shall be retained and constitute a part of the said Apostles on Appeal; and it is further stipulated as aforesaid, that all exhibits introduced in

court by the said respective parties shall be transmitted to the above-entitled court as original exhibits for the said Apostles on Appeal.

Dated June —, 1917, San Francisco, Calif.

ANDROS & HENGSTLER, Proctors for Appellants.

IRA A. CAMPBELL,
McCUTCHEN, OLNEY & WILLARD,
Proctors for Appellees.

It is so ordered.

WM. W. MORROW, Judge.

[Endorsed]: Filed Jun. 14, 1917. W. B. Maling, Clerk. By C. W. Calbreath, Deputy Clerk. [422]

### Certificate of Clerk U. S. District Court to Apostles on Appeal.

I, Walter B. Maling, Clerk of the District Court of the United States of America, for the Northern District of California, do hereby certify that the foregoing 422 pages, numbered from 1 to 422, inclusive, contain a full, true and correct transcript certain records and proceedings, in the causes entitled, Compagnie Maritime Francaise, a French Corp., vs. The Cargo of the French Barque, "Duc d'Aumale," etc., No. 13,941, and Herman L. E. Meyer, George H. C. Meyer, Herman L. E. Meyer, Jr., J. W. Wilson and John M. Quaile, partners under the style of Meyer, Wilson & Co., vs. The French Barque, "Duc d'Aumale," etc., No. 13,959, as the same now remain on file and of record in the office of the Clerk of said Court; said transcript having

been prepared pursuant to and in accordance with the Praecipe for Apostles on Appeal (copy of which is embodied in this transcript), and the instructions of the Attorneys for Appellant herein.

I further certify that the cost for preparing and certifying the foregoing Apostles on Appeal is the sum of One Hundred Fifty-eight Dollars and Five Cents (\$158.05), and that the same has been paid to me by the Attorneys for the Appellant herein.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said District Court, this 10th day of July, A. D. 1917.

[Seal]

WALTER B. MALING,

Clerk.

By C. M. Taylor, Deputy Clerk. [423]

[Endorsed]: No. 3018. United States Circuit Court of Appeals for the Ninth Circuit. Compagnie Maritime Francaise, a French Corporation, Appellant, vs. Hermann L. E. Meyer, George H. C. Meyer, Hermann L. E. Meyer, Jr., J. W. Wilson, and John M. Quaile, Partners Under the Style of Meyer, Wilson & Company, Appellees. Apostles on Appeals. Upon Appeals from the Southern Division of the United States District Court for the Northern District of California, First Division.

Filed July 11, 1917.

F. D. MONCKTON,

Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.

By Paul P. O'Brien, Deputy Clerk. In the United States Circuit Court of Appeals for the Ninth Circuit

No. 13,959.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under the Style of MEYER, WILSON & CO.,

Libelants,

vs.

The French Barque "DUC D'AUMALE," etc., Respondent.

COMPAGNIE MARITIME FRANCAISE,
Claimant.

No. 13,941.

COMPAGNIE MARITIME FRANCAISE,
Libelant,

VS.

The Cargo of the French Barque "DUC D'AU-MALE,"

Respondent,

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under the Style of MEYER, WILSON & CO.,

Claimants.

Order Extending Time to and Including May 14, 1917, to Prepare Apostles on Appeal.

Good cause appearing therefor:

IT IS HEREBY ORDERED that the appellants in

the above-entitled causes may have to and including the 14th day of May, 1917, within which time to procure to be filed the apostles on appeal, consolidated in accordance with the stipulation on file herein, and certified by the clerk of the District Court, and that the clerk of the District Court have to and including the said day within which time to prepare and certify such apostles.

Dated April 14, 1917, San Francisco, Calif. WM. W. MORROW, Judge of Said Court.

Approved:

McCUTCHEN, OLNEY & WILLARD.

[Endorsed]: Nos. 13,959 and 13,941. District Court of the United States for the Northern District of California. Herman L. E. Meyer et al., Libelants, vs. The French Barque "Duc D'Aumale," etc., Respondents. Compagnie Maritime Française, Libelant, vs. The French Barque "Duc D'Aumale," etc., Respondents. Order Extending Time to Prepare Apostles on Appeal. No. 3018. United States Circuit Court of Appeals for the Ninth Circuit. Filed Apr. 14, 1917. F. D. Monckton, Clerk. Refiled Jul. 11, 1917. F. D. Monckton, Clerk

In the Circuit Court of Appeals for the Ninth Circuit.
No. 13,959.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under the Style of MEYER, WILSON & CO., Libelants,

VS.

The French Barque "DUC D'AUMALE," etc., Respondent.

COMPAGNIE MARITIME FRANCAISE,
Claimant,

No. 13,941.

COMPAGNIE MARITIME FRANCAISE,
Libelant,

VS.

The Cargo of the French Barque "DUC D'AU-MALE,"

Respondent,

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under the Style of MEYER, WILSON & CO.,

Claimants.

Order Extending Time to and Including June 14, 1917, to Prepare Apostles on Appeal.

Good cause appearing therefor:

IT IS HEREBY ORDERED that the appellants in the above-entitled causes may have to and in-

cluding the 14th day of June, 1917, within which time to procure to be filed the apostles on appeal, consolidated in accordance with the stipulation on file herein, and certified by the clerk of the District Court, and that the clerk of the District Court have to and including the said day, within which time to prepare and certify such apostles.

WM. W. MORROW, Judge of Said Court.

[Endorsed]: Nos. 13,959, 13,941. In the Circuit Court of Appeals for the Ninth Circuit. Herman L. E. Meyer, et al., Libelants, vs. The French Barque "Duc d'Aumale," Respondent, Compagnie Maritime Française, Claimant. Compagnie Maritime Française, Libelant, vs. The Cargo of "Duc d'Aumale," Respondent, Herman L. E. Meyer, et al., Claimants. Order Extending Time to Prepare Apostles on Appeal. No. 3018. Filed May 14, 1917. F. D. Monckton, Clerk. Refiled Jul. 11, 1917. F. D. Monckton, Clerk.

In the United States Circuit Court of Appeals for the Ninth Circuit.

No. 13,959.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under the Style of MEYER, WILSON & CO., Libelants,

VS.

The French Barque "DUC D'AUMALE," etc., Respondent.

COMPAGNIE MARITIME FRANCAISE,
Claimant,

No. 13,941.

COMPAGNIE MARITIME FRANCAISE,
Libelant,

VS.

The Cargo of the French Barque "DUC D'AU-MALE,"

Respondent.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE. Partners Under the Style of MEYER, WILSON & CO., Claimants.

Order Extending Time to and Including July 14, 1917, to Prepare Apostles on Appeal.

Good cause appearing therefor:

IT IS HEREBY ORDERED that the appellants in the above-entitled causes may have to and in-

cluding the 14th day of July, 1917, within which time to procure to be filed the apostles on appeal, consolidated in accordance with the stipulation on file herein, and certified by the clerk of the District Court, and that the clerk of the District Court have to and including the said day, within which time to prepare and certify such apostles.

WM. W. MORROW, Judge of said Court.

[Endorsed]: Nos. 13,959, 13,941. In the United States Circuit Court of Appeals for the Ninth Circuit. Herman L. E. Meyer, et al., Libelants, vs. The French Barque "Duc d'Aumale," Respondent, Compagnie Maritime Française, Claimant. Compagnie Maritime Française, Libelant, vs. Cargo of Barque "Duc d'Aumale" Respondent. Herman L. E. Meyer, et al., Claimants. Order Extending Time to Prepare Apostles on Appeal.

No. 3018. United States Circuit Court of Appeals for the Ninth Circuit. Filed Jul. 9, 1917. F. D. Monckton, Clerk. Refiled Jul. 11, 1917. F. D. Monckton, Clerk.

In the United States Circuit Court of Appeals for the Ninth Circuit.

No. 13,959.

HERMAN L. E. MEYER, GEORGE H. C. MEYER,
HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under
the Style of MEYER, WILSON & CO.,
Libelants and Appellees,

VS.

The French Barque "DUC D'AUMALE," etc., Respondent.

COMPAGNIE MARITIME FRANCAISE,
Claimant and Appellant,

No. 13,941.

COMPAGNIE MARITIME FRANCAISE,
Libelant and Appellant,

vs.

The Cargo of the French Barque "DUC D'AU-MALE,"

Respondent.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under the Style of MEYER, WILSON & CO., Claimants and Appellees.

Stipulation as to Printing Apostles on Appeal.

IT IS HEREBY STIPULATED by and between the respective parties hereto that in the preparation of the consolidated Apostles on Appeal in the aboveentitled cases, the title of the court and cause on the various documents shall be omitted and in its place and stead shall be inserted the following: (Title of the court and cause); also all admissions of service or receipt of copy on the said documents shall be omitted; and also all verifications on the said documents shall be omitted and in their place and stead the following shall be inserted: (Verification).

ANDROS & HENGSTLER,

Proctors for Appellants.

IRA A. CAMPBELL,
McCUTCHEN, OLNEY & WILLARD,
Proctors for Appellees.

It is so ordered:

WM. W. MORROW, Judge.

Dated San Francisco, Calif.

[Endorsed]: Nos. 13,959, 13,941. In the United States Circuit Court of Appeals for the 9th Circuit. Herman L. E. Meyer, et al., Libelants and Appellees, vs. French Barque "Duc d'Aumale," Respondent, Compagnie Maritime Française, Claimant and Appellant. Compagnie Maritime Française, Libelant and Appellant, vs. French Barque "Duc d'Aumale," Respondent. Herman L. E. Meyer, et al., Claimants and Appellees. Stipulation.

No. 3018. Filed May 23, 1917. F. D. Monckton, Clerk. Refiled Jul. 11, 1917. F. D. Monckton, Clerk.

In the United States Circuit Court of Appeals for the Ninth Circuit.

No. 3018.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON, and JOHN M. QUALE, Partners Under the Style of Meyer, Wilson & Co.,

Libelants,

VS.

The French Barque "DUC D'AUMALE," etc.,
Respondent.

COMPAGNIE MARITIME FRANCAISE,
Claimant,

COMPAGNIE MARITIME FRANCAISE,
Libelant,

vs.

The Cargo of the French Barque "DUC D'AU-MALE,"

Respondent.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON, and JOHN M. QUALE, Partners Under the Style of Meyer, Wilson & Co.,

Claimants.

Stipulation That Interrogatories and Cross-interrogatories Propounded to E. Deddes et al. may be Included in Printed Apostles on Appeal.

IT IS HEREBY STIPULATED AND AGREED by and between the respective parties hereto that the copies hereunto attached constitute the complete and correct interrogatories and cross-interrogatories heretofore propounded in connection with the hearing of the above-entitled causes in the District Court of the United States for the Northern District of California, Division One, in Admiralty, to E. Deddes, Y. de Yonge, A. van Veen and — Hagenryk, all at Rotterdam, Holland, heretofore inadvertently mislaid in the office of the Clerk of the said United States District Court for the Northern District of California, and hence omitted from the Apostles on Appeal as heretofore certified by the said Clerk, and that the said copies hereunto attached may be filed in the above-entitled court and printed as part of the record on appeal.

Dated San Francisco, California, August —, 1917.
ANDROS & HENGSTLER,

Proctors for Appellant.

IRA A. CAMPBELL,
McCUTCHEN, OLNEY & WILLARD,
Proctors for Appellee.

At a stated term, to wit, the October term, A. D. 1916, of the United States Circuit Court of Appeals for the Ninth Circuit, held in the courtroom thereof, in the City and County of San Francisco, in the State of California, on Monday, the twentieth day of August, in the year of our Lord one thousand nine hundred and seventeen. Present: The Honorable WILLIAM W. MORROW, Circuit Judge, Presiding; Honorable WILLIAM H. HUNT, Circuit Judge.

No. 3018.

COMPAGNIE MARITIME FRANCAISE, a French Corporation,

Appellant,

VS.

HERMANN L. E. MEYER, GEORGE H. C. MEYER, HERMANN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUAILE, Partners Under the Style of MEYER, WILSON & COMPANY,

Appellees.

Order Allowing Filing of Interrogatories and Crossinterrogatories Propounded to E. Deddes et al.

Upon motion made on behalf of Messrs. Andros and Hengstler, proctors for the appellant, in the above-entitled cause, and pursuant to stipulation of proctors for the respective parties, filed August 20th, 1917, and good cause therefor appearing, ORDERED that the interrogatories and cross-interrogatories propounded in connection with the hearing of

the above-entitled cause in the District Court of the United States for the Northern District of California, Division No. 1, in Admiralty, to E. Deddes, Y. de Yonge, A. van Veen and —— Hagenryk, all at Rotterdam, Holland, heretofore inadvertently mislaid in the office of the clerk of the said United States District Court for the Northern District of California and hence omitted from the Apostles on Appeal as heretofore certified by the clerk of said District Court, be filed in the above-entitled cause and printed as a part of the Apostles on Appeal.

[Endorsed]: No. 13,959, No. 13,941. U. S. Circuit Court of Appeals for the Ninth Circuit. Herman L. E. Meyers et al., Libelants, vs. French Barque "Duc d'Aumale," Respondent. Compagnie Maritime Française, Libelant, vs. Cargo of French Barque "Duc d'Aumale," Respondent. Stipulation. Filed Aug. 20, 1917. F. D. Monckton, Clerk.

In the United States Circuit Court of Appeals for the Ninth Circuit.

No. 3018.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under the Style of Meyer, Wilson & Co.,

Libelants,

VS.

The French Barque "DUC D'AUMALE," Respondent,

COMPAGNIE MARITIME FRANCAISE,

Claimant.

### COMPAGNIE MARITIME FRANCAISE,

Libelant,

VS.

The Cargo of the French Barque "DUC D'AUMALE,"

Respondent.

HERMAN L. E. MEYER, GEORGE H. C. MEYER, HERMAN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUALE, Partners Under the Style of Meyer, Wilson & Co.,

Claimants.

### Stipulation for Omission of Original Exhibits from Printed Apostles on Appeal.

IT IS HEREBY STIPULATED by and between the respective parties hereto that all exhibits transmitted to the above-entitled court in their original form from the United States District Court for the Northern District of California in the above-entitled causes may be omitted from the printed record, but shall be retained on file by the Clerk of the said above-entitled court for reference, if occasion requires it, by the said Court or the respective proctors herein.

Dated: San Francisco, California, August 20, 1917.

ANDROS & HENGSTLER,

Proctors for Appellants.

IRA A. CAMPBELL,
McCUTCHEN, OLNEY & WILLARD,
Proctors for Appellees.

[Endorsed]: No. 13,959, No. 13,941. U. S. Circuit Court of Appeals for the Ninth Circuit. Herman L. E. Meyers et al., Libelants, vs. French Barque "Duc D'Aumale," Respondent, Compagnie Maritime Francaise, Libelant, vs. Cargo of French Barque "Duc D'Aumale," Respondent. Stipulation. Filed Aug. 20, 1917. F. D. Monckton, Clerk.

At a stated term, to wit, the October Term, A. D. 1916, of the United States Circuit Court of Appeals for the Ninth Circuit, held in the court-room thereof, in the City and County of San Francisco, in the State of California, on Monday, the twentieth day of August, in the year of our Lord one thousand, nine hundred and seventeen. Present: The Honorable WILLIAM W. MORROW, Circuit Judge, Presiding; Honorable WILLIAM H. HUNT, Circuit Judge.

No. 3018.

COMPAGNIE MARITIME FRANCAISE, a French Corporation,

Appellant,

VS.

HERMANN L. E. MEYER, GEORGE H. C. MEYER, HERMANN L. E. MEYER, Jr., J. W. WILSON and JOHN M. QUAILE, Partners Under the Style of MEYER, WILSON & COMPANY,

Appellees.

# Order Granting Motion to Omit Original Exhibits from Printed Apostles on Appeal.

Upon motion made on behalf of Messrs. Andros and Hengstler, proctors for the appellant in the above-entitled cause, and pursuant to stipulation of proctors for the respective parties, filed August 20, 1917, and good cause therefor appearing, ORDERED that all the original exhibits transmitted to this Court from the United States District Court for the Northern District of California in the above-entitled cause may be omitted from the printed Apostles on Appeal but shall be retained on file by the clerk of this court for reference, if occasion requires it, by the said Court or the respective proctors herein.